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Original Articles

THE CAUSATIVE FACTOR IN THE PRODUCTION OF THE DERMATITIS OF GROUND ITCH (UNCINARIASIS).*

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ATLANTA, GA.

In studying the inflammation produced by the larvæ of the *Uncinaria americana* in their passage through the skin, the question arose as to whether the mechanical irritation produced by the presence of the larvæ would account for the vesicular eruption and the intense swelling of the tissues. As previously reported,[1] it was noticed that the eruption of ground itch, while very angry looking, showed very little tenderness on pressure, but was accompanied by an excruciating itching, and the inflammation did not appear to be due to bacterial infection. After considering the eruption and the accompanying symptoms, it appeared that possibly the eruption, the swelling and the intense itching might be due to some substance secreted by the larvæ and poured out into the skin. If such a substance were excreted, might it be present in the bodies of the larvæ before they begin to make their way into the skin, or are they stimulated to secrete this substance after entering the tissues?

If an irritating substance exists in the body of the larvæ before they enter the skin, then might it be possible to extract this substance from the larvæ (provided they can be obtained in pure culture and in considerable quantity) and produce the eruption by placing this substance in contact with the skin or by injecting it subcutaneously?

Even if an irritant existed in the body of the larva, when we remember that the larva is such a minute organism, barely visible to the naked eye when placed on a transparent substance and viewed in a strong light, it would not appear to be a simple matter to attempt the extraction of such a substance, which must necessarily exist in extremely small amount, and the larvæ must be obtained in pure culture to be sure that any substance which might be obtained had come from them. To hatch the eggs and obtain the larvæ mixed with the soil is, as I have previously shown,[1] comparatively easy; and when the eggs are hatched in Petri dishes the larvæ crawl up on the under side of the lid of the dish where there is slight precipitation of moisture.[2]

Bearing this fact in mind, it was decided to take advantage of this trait and to endeavor to obtain great numbers of the larvæ in pure culture. As only a comparatively small number of the larvæ can be hatched in the Petri dishes, and as it would require too great a number of Petri dishes to hatch a quantity of the larvæ, it was determined to employ large specimen jars and hatch the larvæ on a large scale. Therefore, a quantity of sand was obtained and thoroughly washed so as to free it of all fine sediment, and it was then thoroughly baked to be sure that it did not contain any living organisms. This sand was then mixed with semi-liquid feces containing great numbers of the eggs of the *Uncinaria americana,* and the mixture placed in the bottom of the specimen jars.

In this connection I wish to state that the thorough mixing of the feces with the soil (which is necessary for the hatching of the eggs) is greatly facilitated by the larvæ of flies. This was first called to my attention by my friend, Dr. H. F. Harris. I found that the larvæ of the flies would mix the feces and soil far more thoroughly than I could do, and so I made use of them to a great extent. If the feces are left in an open vessel for a short time, even where no flies appear to be present, yet a few are almost invariably attracted to the spot, and there they deposit their eggs, and as they hatch out they begin their almost ceaseless crawling through the mixture. After crawling through the soil in every direction for a few hours and thoroughly mixing it, they usually crawl up on the sides of the jar, and they can then be transferred to another jar, where they will repeat the performance in this second jar. As a result air is carried to all parts of the mixture and all of the eggs hatch at the same time. The mixture of soil and feces was placed in the bottom of eight or ten specimen jars to the depth of one to three inches (Fig. 1). The sides of the jars above the soil were then cleansed of any small particles of soil or sediment so that when the larvæ should begin to climb the sides of the jar they would be uncontaminated.

The larvæ are very sluggish when first hatched, and they are not very lively until about the fourth day, when the first sheath appears, and so do not appear on the sides of the jar until about the fourth or fifth day, as I have explained elsewhere.[2] To be sure that the larvæ will climb up the sides of the jar, certain points must be borne in mind. The jars are closed with tight fitting tops so that the moisture will not pass out of them. The jars must then be placed where they will be in a cool draft of air. This draft will precipitate a thin film of moisture on the sides of the jar, and in this film of moisture the larvæ are able to crawl up the sides. If too much moisture is precipitated it will collect in drops and run down the sides, washing the larvæ back into the soil. If the jars are not placed so as to precipitate this moisture, the larvæ can not be coaxed from the soil, as they are unable to climb the sides of the jar where the

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. JOURNAL A. M. A., vol. xlv, Oct. 14, 1905.
2. THE JOURNAL A. M. A., vol. xliii, Aug. 27, 1904.

glass is dry. Where the proper amount of moisture is precipitated the larvæ will begin to swarm up the sides of the jar about the fourth day, and the masses and network which they form can readily be seen with the naked eye (Fig. 2).

When they have collected on the sides of the jar in this way, if one end of a probe is wrapped with a small piece of gauze and this moistened with water, the larvæ can easily be scraped from the sides of the jar, and if the end of the probe is then shaken into some water in a test-tube, the larvæ are easily washed off into the water. When all of the larvæ have been collected in the test-tube, if the tube is put aside for about an hour, at the end of that time all of the larvæ will have sunk to the bottom of the tube and are readily seen as a flocculent mass. The clear water above this mass can then be removed with a small pipette. The larvæ are thus collected in a small amount of water, free from all sediment. Masses of the larvæ were collected in three or four test-tubes.

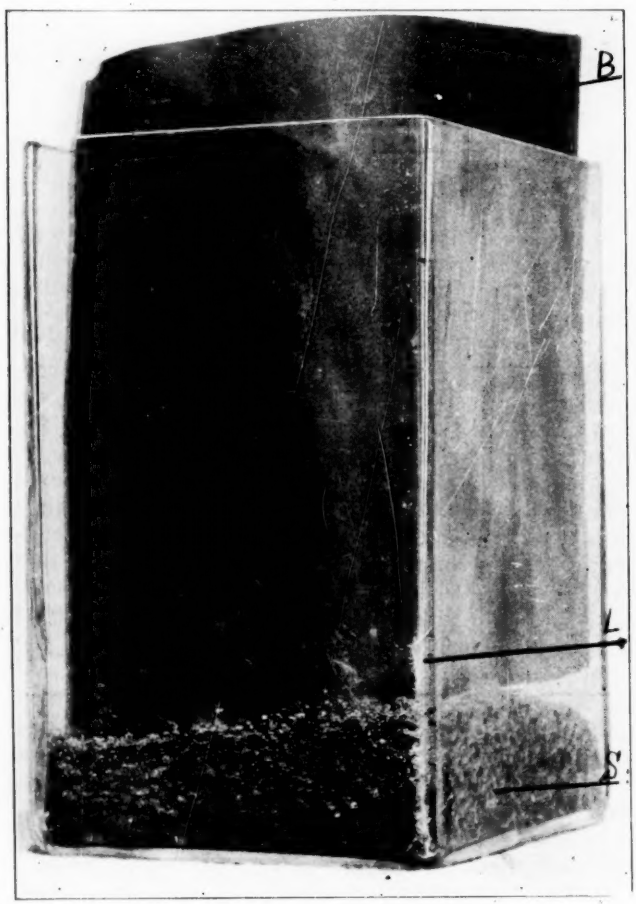

Fig. 1.—B, black paper to serve as background for sides of jar; L, larvæ crawling up the sides; S, sand in bottom.

TREATMENT OF WRISTS.

The next step was to see if it were possible to extract any substance from them which would produce an eruption when placed in contact with the skin. The contents of one test-tube were emptied in a small glass dish, and this was placed in an open window where there was a strong draft of air, and all the water rapidly evaporated. When dry the larvæ formed a thick film over the bottom of the dish. A small amount of absolute alcohol was next added to the dish, the cover was placed over the dish and put aside for a few hours. When the alcohol was poured into the dish it was noticed that the film of larvæ remained tightly stuck to the bottom of the dish and was not dissolved loose by the alcohol. The alcohol was next poured over a small piece of absorbent cotton, just enough to absorb all the alcohol, and this cotton was placed on the wrist, covered with a small piece of rubber, and wrapped with gauze to hold it in place. After an hour's time this was removed, and the area covered by the rubber was found to be reddened in spots. There was very slight itching. After removing the application the redness disappeared to a certain extent. The application appeared to have very little effect until about twenty-four hours after applying it, when small pimples appeared over the area covered by the rubber, accompanied by a very decided itching. By the third day there was a slight tendency toward vesicle formation. While this was very slight the elevations could be distinctly felt by passing the tips of the fingers over the area. The irritation reached its height about the fourth day. There did not appear to be any swelling of the subcutaneous tissue. The eruption had practically disappeared by the sixth day.

A larger mass of larvæ than the foregoing was dried and then ground up in a small mortar, treated with absolute alcohol as before, and then the entire mass taken up on a small piece of gauze and applied to the other wrist. The result was the same as in the first experiment, except that after twenty-four hours the papulo-vesicular eruption was more pronounced and itching much more intense, the papules being closer together and a much larger area involved. By the fourth day there appeared to be a slight thickening of the subcutaneous tissue and the epitrochlear gland was slightly enlarged and somewhat tender. After the fifth day the eruption rapidly disappeared and was practically gone by the eighth day. Figure 3 is from a photograph of this eruption as it appeared on the fourth day.

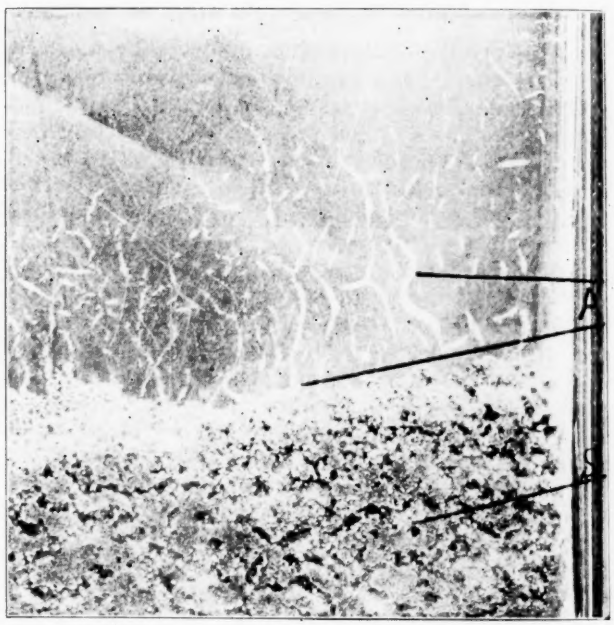

Fig. 2.—A, closer view of masses of larvæ on side of jar; S, sand.

As a control the plain absolute alcohol in a bit of absorbent cotton was placed on the wrist, covered with rubber, and wrapped with gauze, but when removed after an hour's time had not produced any effect on the skin. This would indicate that the irritating substance in the first two experiments was extracted from the larvæ of the uncinaria. A mass of larvæ was treated

with ether and the ether then applied to the skin in the same way as was the alcohol, but without result. Larvæ which were treated with water also gave negative results.

SUMMARY.

From these experiments it would appear that the larvæ of the *Uncinaria americana* produce some substance which is very irritating to the skin, producing severe itching, with a tendency toward vesicle formation.

The eruption produced by these experiments was not so severe as that produced when the living larvæ penetrate the skin; there is not the extreme swelling of the subcutaneous tissues; the itching is not excruciating; there are no severe constitutional symptoms; the eruption disappears in a shorter time. It appears to be a mild form of ground itch, and the two can readily be differentiated when we remember that in these experiments the substance was simply placed on the surface of the skin, while when the living larvæ penetrate the skin they evidently secrete this substance directly into the subcutaneous tissues, as well as into the skin; and while in the experiments the substance was applied only once

Fig. 3.—Fourth day of an eruption on the wrist produced by alcoholic extract of uncinaria.

and was not replenished from time to time, on the other hand the larvæ probably continue to excrete this substance for some time, and thus produce the excruciating itching.

Nature appears to supply this substance to be used as an irritant to the tissues so that the patient will continue scratching the area as long as the larvæ are in the immediate locality, and the scratching and rubbing of the area no doubt facilitates the passage of the larvæ through the tissues.

The eruption produced in these experiments resembles very closely the mild form of ground itch, when only a few larvæ penetrate the skin, producing the discrete form of the eruption, the difference being readily accounted for by the continued activity of the living larvæ.

The substance which produces the eruption has not as yet been obtained in sufficient quantity to attempt to recognize it. It appears to act somewhat as the toxicodendrol which was isolated from the *Rhus toxicodendron* by Professor Pfaff, Harvard University.

THE EXAMINATION AND SURGERY OF THE UPPER END OF THE ESOPHAGUS.*

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Owing to its nature and position, the surgery of the esophagus is limited. In many conditions all treatment is simply palliative. The distress caused by interference with the functions of the esophagus, however, is so great that palliative measures are worth while and we should welcome any increase in their efficiency. Until recently the diagnosis of diseases of the esophagus has been made from the patient's history and the general symptoms, supplemented by the findings obtained from passing bougies. The treatment has been along restricted lines, and consisted of the use of bougies, with an occasional operation through the front or the side of the neck on the only accessible part of the esophagus, the upper half. Since the introduction of light-bearing tubes the diagnosis of diseases of the esophagus is no longer made by inference, but by sight and the removal of suspected tissue for the microscope.

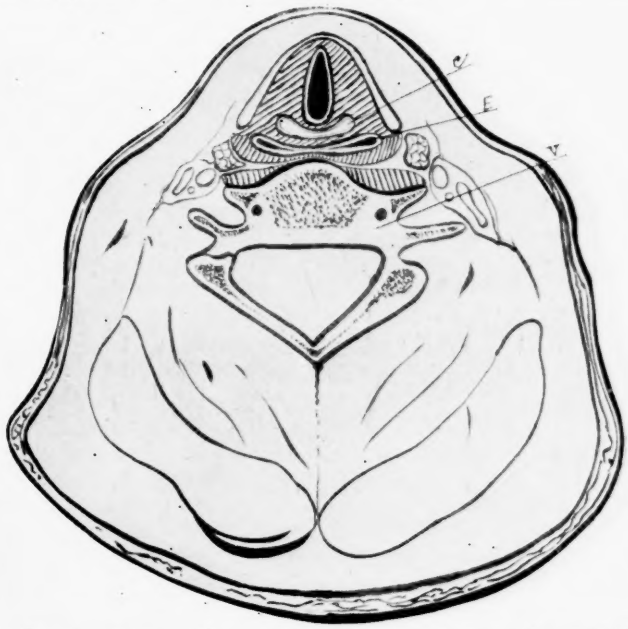

Fig. 1.—Cross section of the neck through the sixth cervical vertebra: C, Cricoid cartilage. E, Esophagus. V, Sixth cervical vertebra.

This paper will take up briefly certain necessary points in the applied anatomy of the esophagus and will present a speculum and a set of instruments for examining the upper end of the esophagus and the larynx, and for working in this locality.

APPLIED ANATOMY.

Congenital Anomalies.—The esophagus may be divided or double. It may open into the trachea; the lower part being absent. Fistulas between the trachea and the esophagus occur and annular strictures which are congenital are found. True diverticula are acquired. In the upper part of the esophagus they are due to a hernia of the esophagus through the inferior constrictor muscle. They may be due also to the contraction of scar tissue which joins the esophagus to neighboring structures.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* Models made in the Anatomic Laboratory of the Harvard Medical School.

Structure.—The esophagus has an outer muscular coat of two layers and an inner glandular coat covered with pavement epithelium. A connective tissue layer joins the two chief layers. The outer layer of the muscular part consists of longitudinal fibers and the inner layer of circular ones. The anterior longitudinal fibers are attached to the back of the cricoid cartilage. The inner layer of circular muscular fibers is a continuation downward of the fibers of the inferior constrictor muscle. The upper end of the esophagus is the lower end of the pharynx, so that voluntary muscular fibers predominate in it. From this it happens that a foreign body arrested at the entrance of the esophagus often is thrown back into the pharynx and into the mouth.

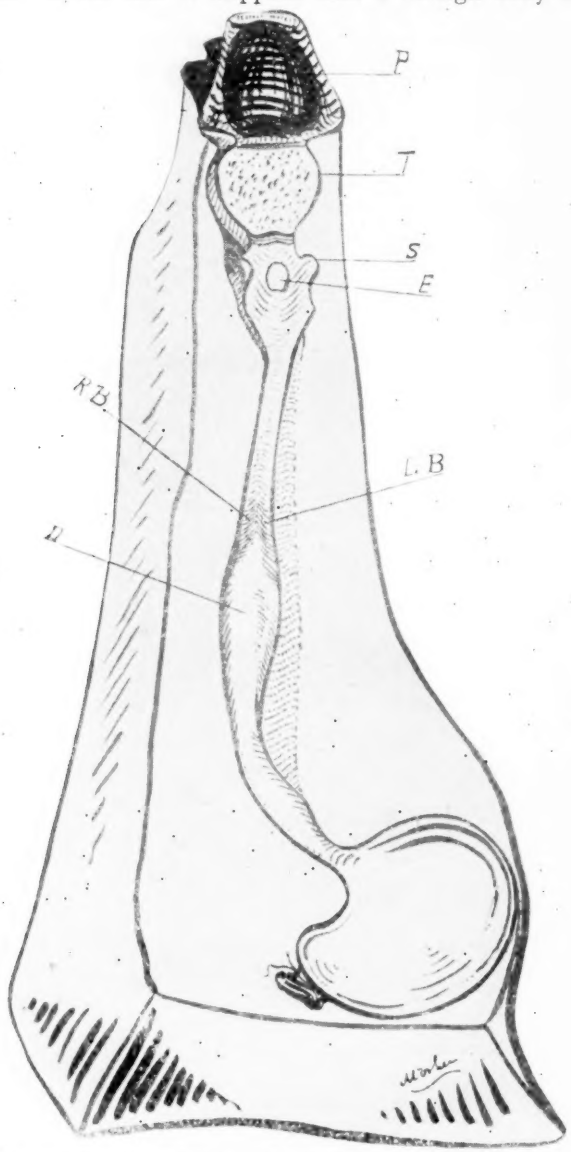

Fig. 2.—Wax cast of the esophagus; P. Hard palate. T. Base of tongue. S. Pyriform sinus. E. Epiglottis. L. B. Oblique line made by left main bronchus. R. B. Oblique line made by right main bronchus. D. Dilatation back of the heart.

Lymphatics.—The lymphatics of the pharynx enter both the mediastinal and the cervical glands so that in suspected cancer of the esophagus the glands at the root of the neck should be examined.

Direction.—The esophagus is placed in the greater part of its course a little to the left of the middle line. In the middle of its course, at the fourth thoracic vertebra, it swings to the middle line, back of the arch of the aorta, but at once goes to the left again and enters the stomach to the left and in front of the aorta, at the eleventh thoracic vertebra. This deviation from the middle line does not interfere with the passing of bougies or tubes except at the lower part where the esophagus passes through the diaphragm. Here the point of a metal tube has to be swung to the left if its passage is to be painless.

Position.—The esophagus has the vertebral column behind it and the trachea in front and lying on it. At the fourth thoracic vertebra the arch of the aorta makes a transverse constriction in it and a vertebra lower down the left main bronchus, at the fifth thoracic, makes an oblique line across its front surface. Below this point the heart lies on it like a weight. In the lower part, the right and left pneumogastric nerves lie on the sides of the esophagus, and back of the arch of the aorta the thoracic duct crosses from right to left behind it, on the front of the vertebral column.

Lumen.—At the beginning the esophagus is a transverse slit slightly less than an inch wide (Fig. 1). The width increases somewhat on the way down, and the esophagus becomes more of a tube until at the point where it goes through the diaphragm it is nearly round and measures a little over an inch in both diameters (Fig. 2). The most important constriction of the esophagus is at the beginning, back of the cricoid cartilage. The narrowing next in importance is at the cardiac end. The constrictions back of the arch of the aorta and behind the left main bronchus are less important. The upper narrowing is due to the cricoid (Fig. 1). The lower constriction is caused by the fibers of the diaphragm as they surround it (Fig. 2). One of the two wax casts of the esophagus which I made shows these measurements nicely (Fig. 2). In the other the constriction at the diaphragm is much narrower than one inch. Both casts show a marked dilatation of the esophagus back of the heart. This is limited above by two oblique lines, a right and a left, made by the right and left main bronchus. The V made by the bifurcation stamps itself on the esophagus. In both casts this dilatation lay markedly to the right of the median line. The esophagus begins 6 inches from the incisor teeth, back of the cricoid cartilage at the sixth cervical vertebra. It is 10 inches long, and goes through the diaphragm at the tenth thoracic vertebra, 16 inches from the teeth. It is crossed by the arch of the aorta back of the middle of the first piece of the sternum, 10 inches from the teeth. The measurements to be remembered in connection with it are, then, 6 and 10.

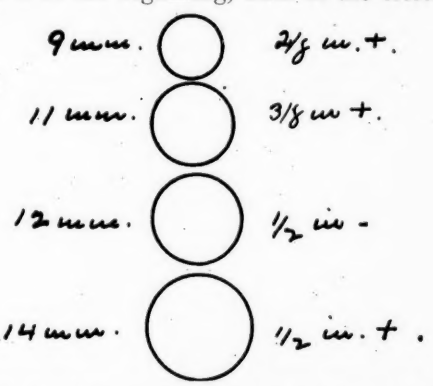

Fig. 3.—Diameter of esophagus for different ages.

Distensibility.—A half-inch bougie should pass easily everywhere. Its failure to pass is a sign of

stricture. A ¾-inch bougie is the largest which should be used to dilate the esophagus. The distensibility of the esophagus is much greater in the living than in the dead. On the dead, when the esophagus is stretched transversely only, it dilates to 40 mm., or 1½ inches. The ordinary full-sized tooth plate is 2¼ inches (57 mm.) broad. A 50-cent piece is 1⅛ inches (30 mm.) wide. Since the transverse diameter of the esophagus hovers round 1 inch it would seem as if this coin should pass readily in an adult. The direction in which the esophagus will stretch the most is from side to side. For this reason oval tubes take up the slack in the esophagus along anatomic lines better than round ones.

The following tables are compiled from Stark. They are of use for reference:

DIAMETERS OF THE ESOPHAGUS AT THE FOUR CONSTRICTIONS.

Constriction.	Diameter.	Vertebra.
Cricoid.....	Transverse 23 mm. (1 in.)..... Antero-posterior 17 mm. (¾ in.).	Sixth cerv.
Aortic.....	Transverse 24 mm. (1 in.)..... Antero-posterior 19 mm. (¾ in.).	Fourth thor.
Left bronchus.	Transverse 23 mm. (1 in.)..... Antero-posterior 17 mm. (¾ in.)	Fifth thor.
Diaphragm....	Transverse 23 mm. (1 in. +)..... Antero-posterior 23 mm. (1 in. —)	Tenth thor.

LENGTH OF THE ESOPHAGUS AT DIFFERENT AGES.

	Teeth to Cricoid.	To Bifurcation.	To Cardia.	Length of Whole Esophagus.
Birth.	7 cm. (2¾ in.)..	12 cm. (4¾ in.)	18 cm. (6¾ in)	10 cm. (4 in.)
1 year.	10 cm. (4 in.)..	14 cm. (5½ in.)	22 cm. (8¾ in.)	12 cm. (4¾ in.)
2 years.	10 cm. (4 in.)..	15 cm. (6 in.)	23 cm. (9 in.)	13 cm. (5⅛ in.)
5 years.	10 cm. (4 in.)..	17 cm. (6¾ in.)	26 cm. (10¼ in.)	16 cm. (6⅜ in.)
10 years.	10 cm. (4 in.)..	18 cm. (7 in.)	28 cm. (11 in.)	18 cm. (7 in.)
15 years.	14 cm. (5½ in.).	23 cm. (9 in.)	33 cm. (13 in.)	19 cm. (7½ in.)
Adult.	15 cm. (6 in.)..	26 cm. (10¼ in.)	40 cm. (15¾ in.)	25 cm. (10 in.)

For memorizing the length of the esophagus at different ages the following approximate figures are given: Birth, 7 inches; 5 years, 10 inches; 15 years, 13 inches; 25 years or adult, 16 inches (Stark).

DIAMETERS OF TUBES FOR DIFFERENT AGES (see Fig. 3).

To 8 years..... 9 mm.
From 9 to 15 years..... 11 mm.
From 17 years.....12 to 14 mm.
Adults ..... 14 mm. (average).

CLASSIFICATION OF DISEASES OF THE ESOPHAGUS.

I have tabulated the cases of diseases of the esophagus which have been treated in house patients for the last 19 years at the Massachusetts General Hospital. An attempt was made to get the end results of cases for the last 10 years. Out-patient cases were not investigated because the information which could be obtained was too fragmentary. In the list thus compiled there is one case of abscess of the esophagus and there are three of diverticulæ. Stricture gave the greatest number of cases. Of these there are 106.

Stricture.—Of the 106 cases of stricture the nature of 88 was not determined. The answers to the letters of inquiry show that very many of these were cases of cancer. There are 16 strictures due to swallowing some corrosive fluid. Such cases, therefore, make about 16 per cent. of all. One stricture was classed as syphilitic and one as congenital. In the future, with our more exact methods of examining the esophagus, time will not be relied on so often to settle the diagnosis in such a large number of cases.

Carcinoma.—Thirty-six cases are entered as carcinoma or about two a year. The reports from these cases are tragic in the extreme. They show that the surgery of carcinoma of the esophagus is simply palliative.

Foreign Bodies in the Esophagus.—In marked contrast to the cases of carcinoma of the esophagus the cases of foreign bodies in the esophagus often have an element of comedy. The surgery of foreign bodies is generally successful so that a smile at some of these cases is pardonable. There are 57 cases of foreign bodies in the esophagus. They are divided as follows:

Coins	14	Peach stone	1
False teeth	12	Button	1
Round whistles	6	Collar button	1
Bits of bone	4	Spoon	1
Common pins	3	Suspenders (a pair)	1
Buckles	3	Objects not named	6
Safety pins	2		
Stones	2		57

From this list it is evident that the two most common foreign bodies are coins and false teeth. Next comes the round penny whistle. Babies crawling on the floor pick up coins and bits of bone and stone. They must also pick up pins and buttons, but these, as a rule, go on and out without causing trouble. Buttons give trouble more often in the nose and pins in the trachea. The case, therefore, might be stated as follows: the toothless baby swallows coins and whistles; the toothless man swallows his false teeth. The majority of foreign bodies cases occur in infants or children. After 5 or 6 years of age the esophagus is of sufficient size and distensibility to take care of smooth objects with great ease. I know of one child where all small coin passes readily. When she was 8, a half-dollar was swallowed and passed. She is now 9, but silver dollars are kept away from her for prudential reasons. The great distensibility of the adult esophagus is shown by the sword swallowing of the juggler. Once entered in the esophagus, a foreign body has to be of very considerable size and rough in order to keep from going down. False teeth are the commonest foreign body to meet these requirements. In these cases Nature often works wonders. In one of the cases tabulated above, the teeth were never found, but the end of the probang broke off in the attempt to find them and was passed a few days after. In another case the plate was passed in a few months after the patient left the hospital. In the light of these 2 cases, the man who left the hospital untreated and against advice, preferring to trust Nature rather than the surgeon, was not so insanely foolish as it would seem. Among the demented the beginning of the intestinal canal, the same as the end, is the receptacle of queer articles. My list includes two cases of this kind. In the first a spoon was swallowed; in the second a part of a ball of string, three buckles and a pair of suspenders. The following man could not be classed as demented, but he surely was unfortunate. He went to a party and ate some candy. The candy stuck to his false teeth. He swallowed the candy and his teeth, too.

Treatment.—In surgery 20 years is a long time. One would expect in this period, therefore, great changes in treatment. In the surgery of the esophagus, however, there have been but few. The greatest change and advance is the safe laparotomy of to-day, which allows the stomach to be opened in order to reach foreign bodies lodged in the thoracic part of the esophagus, or to establish a permanent gastric fistula as the last resort of palliative treatment. In most of the coin and whistle cases the records show that the bristle probang and coin catcher failed to remove the foreign body, so that most of these cases were treated by opening the esophagus from the side. The great majority of the patients recovered without incident and had no subsequent trouble. Pneumonia followed the operation but rarely. This

method must be regarded as heroic, perhaps, but satisfactory. With our light-bearing tubes of to-day, I feel that the majority of such cases should be managed without the external operation. Smooth foreign bodies predominate with children, but with adults rough ones are commonest. With adults, therefore, the case is different. The sharp angles of tooth plates imbed themselves so firmly in the esophagus that prolonged attempts at extraction with tubes often make matters worse. The esophagus is a septic tract, so that it is not advisable to connect it with the tissues of the neck or with the pleural cavity.

From a review of the cases, the treatment of strictures of the esophagus due to swallowing corrosive fluids seems to be fairly satisfactory. The majority of such cases need to have bougies passed at intervals for life. The severest cases are made livable by cutting the stricture with fish line. Some of these desperate cases require the repetition of this procedure a number of times and then, when as much has been gained as possible, this gain must be maintained by bougies. It would seem as if, with our light-bearing tubes which allow us to come down on the stricture and examine it, that some method of cutting and dilating the stricture based on the methods used in the urethra ought to be devised for the esophagus. Speaking of the use of string in cutting strictures of the esophagus brings up another use of string in the esophagus which we who are using tubes might take advantage of more than we do. I refer to the procedure of having the patient swallow a string until one end is well entered in the upper part of the intestines. The free end comes out of the patient's mouth and is worn over the ear. When the lower end is well down in the alimentary canal, the upper end can be pulled on with considerable force without coming up. Such a taut string can be used for a perforated olive tipped bougie to run on. It is a sure guide, of course, to the lumen of the stricture. A similar string could be employed equally well to guide an esophageal tube to the opening of a stricture. As far as I know it is a matter of theoretical interest only to remember that a string fed to a patient in this way has been known to appear at the anus.

As the esophagus is covered with flat pavement epithelium, most of its malignant growths are epitheliomata. It has a liberal supply of glands, so that a new growth can start also from these. When the growth deeply infiltrates, palliative treatment is all that is possible, no matter whether the growth is in the upper or the lower portion of the esophagus. In the rare cases in which the growth occurs in the upper part of the esophagus and does not infiltrate, there is a chance of successful removal. One very pretty case of this kind went out of the hospital some months ago. Examination under ether by esophageal tubes showed a hard annular stricture just back of the cricoid. A small projecting knob was removed from this, which proved the growth to be

Fig. 4. — Normal esophagus, quiet breathing.

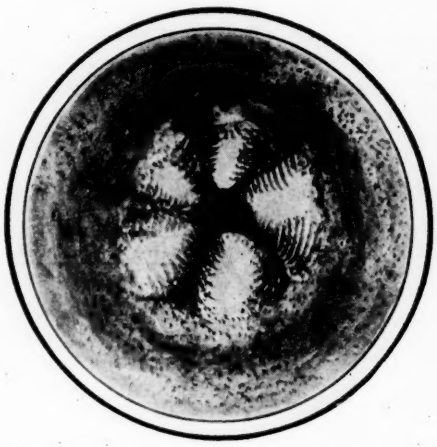

Fig. 5. — Normal esophagus, deep breathing.

Fig. 6.—Scars from acid burns radiating from the lumen of a stricture.

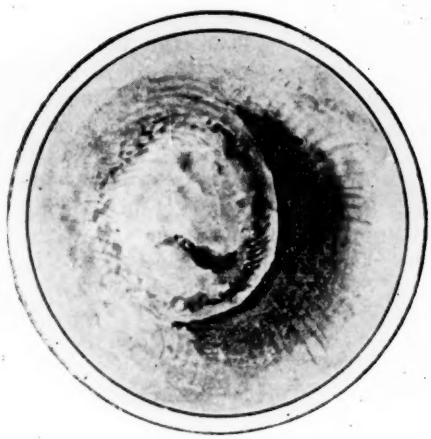

Fig. 7.—Carcinoma.

Fig. 8.—Carcinoma.

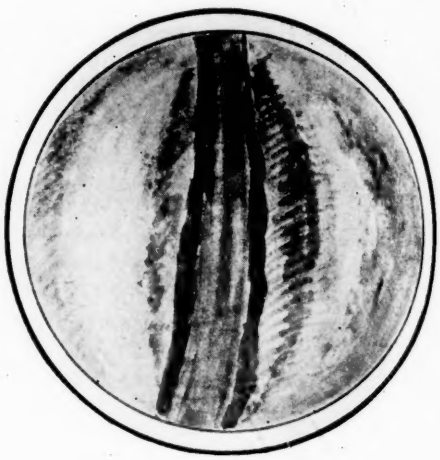

Fig. 9.—Fishbone.

PICTURES OF THE ESOPHAGUS OBTAINED THROUGH THE ESOPHAGEAL TUBE.

carcinoma. The case was transferred surgical and the growth was removed through the neck by the left lateral route. It did not infiltrate and so was dissected out readily. The end of the divided esophagus was brought to the surface of the side of the neck and stitched there. The patient was fed through this by funnel and tube. The patient chewed her food and spit it into the funnel. In this case the esophageal tube located the place of stricture and determined its character. This was well worth while. Perhaps, by means of the tubes, we can soon determine oftener what cases are operable and what are not. Figures 4, 5, 6, 7, 8, 9 are pictures of the esophagus as seen through the esophageal tube (after Stark).

From the surgical standpoint, the most satisfactory esophageal cases are cases of diverticula of moderate size. A thorough dissection cures the case at once. Two such cases are in the house records.

SURGERY OF UPPER END OF ESOPHAGUS.

I have been somewhat long in getting to the second part of my paper, namely, the examination and the surgery of the upper end of the esophagus. I have indicated already, to a certain extent, the character of the surgery which is possible in this locality. The upper end of the esophagus is the most accessible. This is fortunate, because the majority of pathologic conditions are found here. The cricoid cartilage acts as a cartilaginous stopper and makes the beginning of the esophagus the narrowest part. Foreign bodies lodge first back of the cricoid; corrosive fluids are delayed longest at this point, so that strictures are commonest and most extensive here; congenital clefts choose this locality from embryologic reasons; diverticula are commonest here, and, finally, cancer is located, as a rule, at the upper or the lower end of the esophagus, seldom in the middle. All this is especially fortunate, because, even if palliative measures are all that are left in so many cases, they are vitally important for the comfort of the patients, since starvation is not an easy form of death.

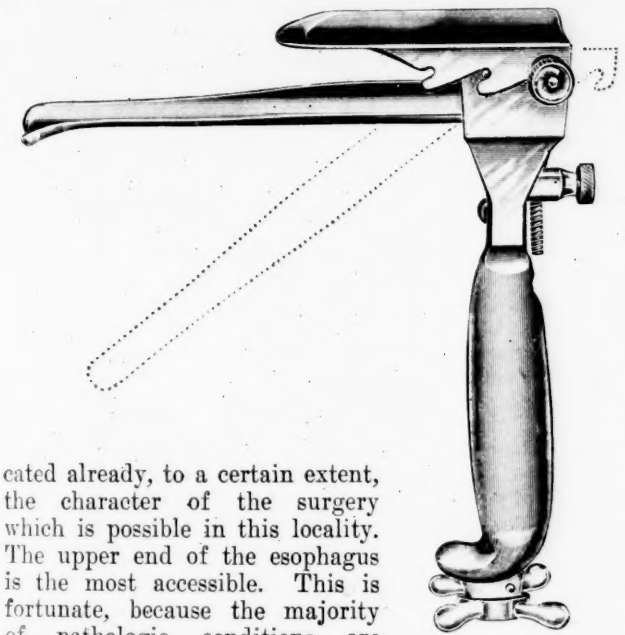

Fig. 10. — Author's speculum.

The two methods of reaching the upper end of the esophagus by external operation are subhyoid pharyngotomy and lateral esophagotomy. Subhyoid pharyngotomy has a very evil reputation so many patients die in a few days of pneumonia. If the patient is operated on in the sloping position and kept in this position or the upright position afterward and not allowed to lie flat in bed, and, further, is fed by rectum for the first few days, the danger of pneumonia from secretions getting into the trachea is much lessened. The foreign body cases show that lateral esophagotomy is much safer than subhyoid pharyngotomy. When lateral esophagotomy is done for carcinoma, feeding by mouth is shut off forever, because the upper end of the esophagus is usually brought to the side of the neck.

Subhyoid pharyngotomy is a tempting operation for growths at the beginning of the esophagus; it is so direct. In a recent case in which I operated by this route for cancer back of the cricoid, the patient escaped immediate pneumonia from the operation, but did not regain the ability to swallow, so that after feeding by rectum for the first few days food was given partly by rectum and partly by the stomach tube. At the beginning of the third week the patient died of pneumonia. Lateral esophagotomy would have simplified the feeding in this case and possibly would have prevented the pneumonia.

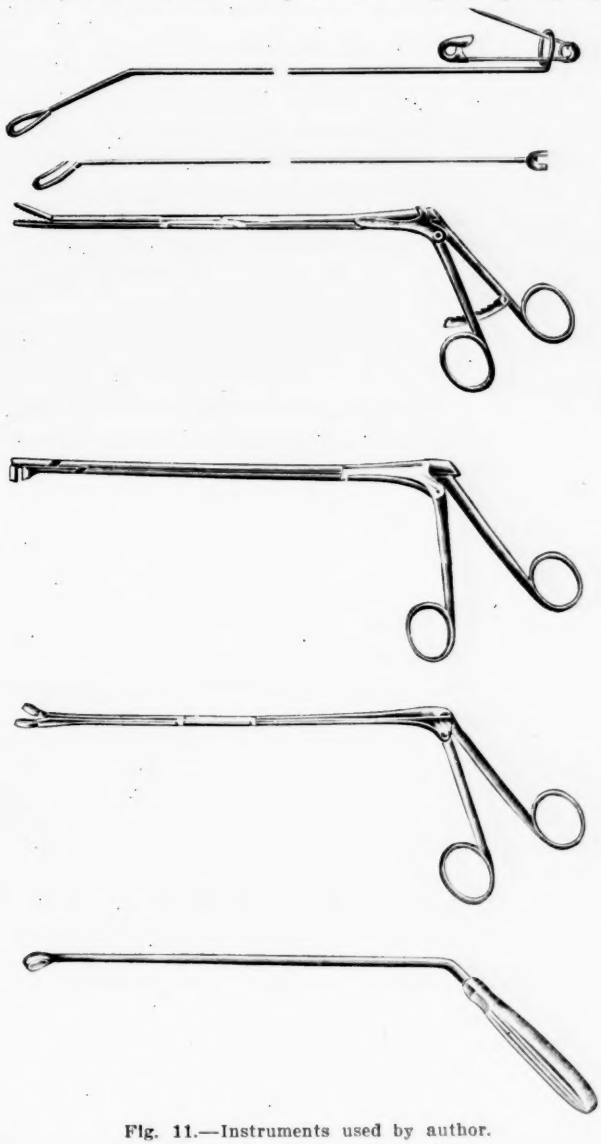

Fig. 11.—Instruments used by author.

Much can be done in the examination of the esophagus under cocain, but for exact examination, for the rapid dilatation of a stricture or for curetting a carcinomatous growth either for the purpose of diagnosis or for enlarging its lumen, ether is preferable. The cricoid cartilage is the great obstacle to the free passage of instruments into the esophagus. The constrictor mus-

cles draw it back against the cervical vertebræ so that the opening of the esophagus becomes a transverse slit. If the head is bent back too far, the soft tissues are put so much on the stretch that the cricoid can be moved forward but little. On raising the head somewhat, however, the tension of the cricoid is released. It is important to remember this, especially in introducing esophageal tubes under cocain. The sides of the upper part of the esophagus do not have the rigid boundaries of the central part. The natural pathway for food into the esophagus is at the sides by way of the pyriform sinuses. Often it is easier to engage a bougie or a tube in the esophagus by placing it first in the pyriform sinus and not to bring it to the middle line until the cricoid has been passed (Fig. 2).

Figure 10 represents a speculum which I designed and which facilitates the examination of the lower pharynx and the upper end of the esophagus and the pyriform sinuses and extends the scope of the palliative measures which are possible in this locality. With the speculum there is a set of instruments of the proper length and shape for carrying out such procedures (Fig. 11). The speculum is Kirstein's tongue spatula developed into a bivalve speculum. In place of three hoods, the instrument has a single adjustable hood. Both the width and length of this can be regulated (Fig. 12). The long arm of the speculum is of sufficient length to pass by the epiglottis and to

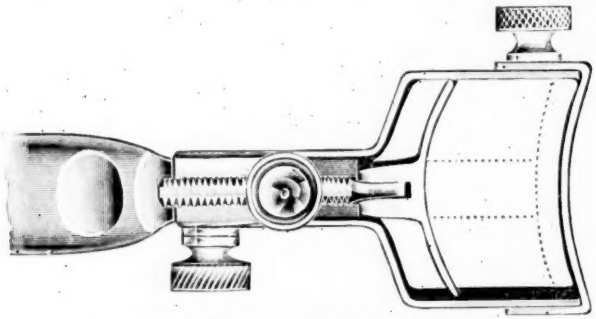

Fig. 12.—Adjustable hood for speculum.

reach the middle of the back of the cricoid cartilage. This arm can be elevated so that the cricoid cartilage is pushed forward and the upper inch of the esophagus exposed. This instrument is of use also for examining and operating on the larynx by the direct method. It will always give a view of the arytenoids and the posterior half of the cords. In the majority of the cases in which it has been tried it has given a view of the anterior commissure. In trying to get a view of the anterior ends of the vocal cords I have found that it is better to work through a moderate opening of the hood. With a large opening of the hood the larynx is pushed forward and the tissues of the neck are so stretched that the esophagus balloons widely, but the front of the larynx is pushed out of the line of vision.

The advantage of examining and working on the lower part of the pharynx and the upper end of the esophagus through a speculum of this kind rather than to work through an esophageal tube is that you have the whole field in view at once. With the tube you work through a keyhole; with the speculum, through a window.

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DISCUSSION.

DR. E. FLETCHER INGALS, Chicago, said that Dr. Mosher did not go into the operations that are spoken of in recent works on surgery. He was pleased with what was said about carcinoma of the esophagus, because he believes it is worse than useless to attempt to remove such growths from this position. There may be exceptions, but they are very rare. In recent works on surgery it is recommended that effort be made to open the constricted esophagus by various methods of dilatation, even in carcinoma, and as a last resort gastrostomy is recommended. It seems better to do this operation early and not worry the patient with efforts to open the esophagus, because certainly it will not stay open, and the patient will live as long and more comfortably than by the latter procedure. He did understand how the string is passed in stricture of the esophagus, but it undoubtedly would aid much in passing the stricture. Internal cutting of the esophagus similar to the internal cutting of the urethra, is attended by so much danger from hemorrhage that he did not think it could be advised. More particularly, since the *x*-ray has come into use he has observed that flat bodies, like coins, lodge in the esophagus with the flat surface anteroposteriorly. This is a point of interest in their removal with the common esophageal forceps. In such cases, it is generally fairly easy to remove such bodies by passing the blades down to the point where the body is located, then opening them and passing them a half-inch further, when the foreign body is almost sure to be caught. Old-fashioned forceps answer the purpose for these bodies very well. The pictures of the esophagoscopic images are valuable, as when one first uses the instrument he is wholly unprepared to understand the picture. It was a surprise to him to find that the esophagus is an open tube, from just below the larynx down nearly to the stomach.

DR. EMIL MAYER, New York City, said that the bivalve speculum which Mosher has devised will undoubtedly never be of great value. The bend in the lower end of this speculum will turn a curve into a straight angle and enable the surgeon to get a view of what he is looking for. Regarding stricture of the esophagus, Dr. Mayer spoke of the importance of making haste slowly. It was his good fortune to see one of the two rarest cases in the literature of the world; the other case being recorded in Ziemsen's Encyclopedia. It was congenital stricture of the esophagus. The child, whose case he reported about 15 years ago, he saw when she was 10 years old. She had never swallowed solid food, and it was rather amusing to see her attempts to get food down. She would take a cake and lie down on the sofa with her heels where her head ought to be, and after the food was well masticated she would make an unsuccessful attempt to swallow it. The only thing she could swallow was slow sips of liquid. One single stretching and passing of a bougie cured her, although she had a number of them afterward, and came every six months to have a tube passed and to see that it was still patent. But immediately after the passing of the first esophageal bougie she was entirely well. On the other hand, there are large numbers of cases of stricture of the esophagus of very frequent occurrence, such as the swallowing of concentrated lye. He presumed that all had seen such cases, particularly in the South. When stricture occurs in that way it becomes of such density that it is necessary to be extremely careful in passing the esophageal bougie. The main point of advance, as far as laryngology is concerned, is in the question of diagnosis, and Dr. Mosher has helped to make a diagnosis of the condition present, whether a diverticulum, stricture of the esophagus, a foreign body, or malignant disease. The treatment of stricture of the esophagus is a matter of surgical interest, and external operation must be considered.

DR. R. C. MYLES, New York City, said that last year three cases came under his observation that illustrated some points in regard to diagnosis and the manipulative technic and how far it should be carried out. One of these was published several times. It was that of a man whose teeth lodged in the esophagus beneath the sternum. He saw the patient two months afterward and made a diagnosis by both sounding and the *x*-ray. In his opinion it was improper and inexpedient to attempt to remove it by force. He succeeded in engaging it several times with the instrument, but always desisted when the resistance was a certain amount, because he felt that a traumatism would be almost certain death without proper drainage, and he turned the case over to a general surgeon. Dr. John A. Wyeth made an incision in the left side of the

neck, extending beneath the clavicle, and an incision in the esophagus, in which he found the teeth embedded deeply in the walls with granulation tissue around them. The teeth were extracted and for a while the patient's food passed through this esophageal opening, but it gradually filled up and the man to-day is practically well without evil consequences. If he had pulled with more force, the patient might have been injured. Last year a man came to him suffering from great pain and difficulty in swallowing, with edema of the posterior part of the larynx and esophageal opening, a history of having swallowed half of the wishbone of a chicken. By simply making the patient say o, a, e, and moving the larynx, he succeeded in seeing a white substance, and with the forceps seized the bone. It was two inches long, with sharp edges. It had penetrated the tissues between the opening of the esophagus and the interarytenoid space and extended through the neck almost to the skin. The man had edema of the larynx, and for several days it was a question whether tracheotomy would not have to be performed, but he finally recovered. About a week afterward a woman, a friend of the last patient, while sitting at the table joked about his swallowing the chicken bone, when she swallowed one herself. Her physician sent for Dr. Myles and he removed part of a breast bone from the upper part of the esophagus. It was about as large as a 25-cent piece, with sharp edges. In both cases the swallowed bones were hidden in the ordinary position of the larynx, but in the act of moving the throat, singing and making noises, they could be seen. A few years ago he had an interesting case in a patient who swallowed a piece of the joint of a bone that had been slashed with a knife and was part bone and part gristle, about as big as a 50-cent piece. He engaged it with an umbrella bougie, but could not turn it loose. He held on to one end of the instrument until finally she jerked and pulled bone and instrument out together. It was too large to come without tearing its way out. Fortunately, she got well. He supposed it was high enough up not to have done much damage. It would seem better to rely on general surgery when teeth or anything of that kind is swallowed, because if too much force is used, it may easily happen that the parts are torn irreparably.

DR. C. M. ROBERTSON, Chicago, spoke of spasm of the larynx in cases of foreign bodies in the esophagus. The lower end of the esophagus belongs to the general surgeon, but the laryngologist's territory extends down to the bifurcation of the bronchus. He had several cases in elderly people who had swallowed large pieces of food, meat or something of the kind, which usually lodges in the first ten inches from the teeth. As soon as the bolus of food gets into the esophagus there is a contraction of the muscles, both above and below the foreign body, and these muscular contractions are so strong that it is almost impossible to remove the foreign body. That has given rise to a so-called stricture of the esophagus when no stricture really exists. In these cases a large bougie will do better than a small one as the contraction of the muscle is overcome by greater pressure. If it does not resolve in some such way spasm of the larynx occurs as a secondary condition and patients sometimes succumb to spasm of the larynx from a foreign body in the esophagus. He thought the surgery in these cases should be limited to dealing with the diverticula. If the foreign body is small the use of the tube with illumination would be the proper treatment. If the foreign body is too large to remove by forceps through the tube then the use of the bougie is indicated.

DR. H. P. MOSHER, Boston, said that he tried not to mix general surgery with special work on the upper end of the esophagus. A good deal of encroaching on general surgery may be legitimately done in the upper end of the esophagus; for instance, in carcinoma. He had the good fortune to be able to curette down a polypoid growth at one sitting with esophageal tubes. He does more in one sitting than can be accomplished in many sittings by the other methods. If anything can go through a stricture a string can; it has been found that a string will find its way where nothing else will. It takes from three or four days to a week or more to find its way down. The fact that coins usually lie transversely in the esophagus emphasizes the fact that the esophagus is flat at the beginning and dilates best transversely. In removing coins many old instruments will work well. That is illustrated by an amusing experience Dr. Mosher had with a foreign body, a coin in the upper end of the esophagus. He passed a tube directly by it. His house officer later took an old-fashioned corn catcher and presented the coin to him. He had had no personal experience with electrolysis, but was glad to know that it has worked in the cases spoken of. It should be remembered that in sword swallowing the sword has six inches to go before it gets to the esophagus. Somebody might take an *x*-ray picture and see how far it really goes. He did not, by any means, advocate the use of the speculum for passing the tube. The tube can be passed under cocain very readily, in the majority of cases. His instrument is to be used when it is necessary to see the pyriform sinus and the beginning of th esophagus, and to do definite work in this locality.

MODIFICATION OF THE SIMPLE MASTOID OPERATION WHICH SHORTENS CONVALESCENCE BY FACILITATING WOUND REPAIR.*

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It is the purpose of this paper to draw attention to a new method of operative procedure on the mastoid process, which we have employed with most successful results. We will briefly describe its technic, consider its peculiar problems, and state in detail such personal experience as will give a clear idea of its theory and practice.

For a long time we had been convinced that the simple mastoid operation now in vogue for the mechanical relief of acute suppurative mastoiditis, with its accompaniment of unremitting pain, was greatly inadequate, and that there must be some means of improving on it. We refer especially to the long and tedious convalescence that invariably follows it, as shown by the statistics of the duration of wound repairs in our large aural clinics. Even if the case goes well, the time before cicatrization takes place varies from 4 to 8 weeks, and very frequently we are called on to do a secondary operation.

Under any circumstances, prolonged convalescence must be regarded as a hardship; but when the patient is poor it may be a serious calamity. Whether or not he be a worker himself, an additional burden falls on the working members of his family; worse still, if it be the chief breadwinner who is thus incapacitated, the result can be only suffering and privation for those who are dependent on him.

An operative process, then, that can mitigate such conditions, or the possibility of such, is unquestionably a blessing. Fortunately for humanity, the duration of wound repair in the field of general surgery is much shorter than in the field we are considering. We now observe complete recovery after removal of the breast, with extirpation of the contents of the axillary space, in 14 days, and in cases of amputation of the thigh the surgeon deplores having to detain the patient in the hospital over the third week.

Believing that the unfortunate contrast to these conditions furnished by all cases of mastoid surgery was due mainly to a defect in the accepted method of operation, we set ourselves the task of studying its problems

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with a view to remedying this defect if possible. Accordingly, we made a series of experiments on the cadaver in the anatomic department of Tufts College. Its result was an operation which seemed so rational that there appeared to be ample justification for performing it on the living subject. Following is a brief description of its technic.

TECHNIC.

The usual cutaneous incision is made posterior to and parallel with the general direction of the auricle, extending from the extreme tip of the mastoid process upward to a point ½ inch above the upper insertion of the auricle. If possible, we cut at once down to the bone, and make the entire incision with one sweep of the knife, the exception to this one sweep being in cases of babies and young children with large subperiosteal abscesses, in which there may be great destruction of the outer table of the mastoid. In these cases we work our way carefully through the abscess with the blade of the knife held horizontally so as to avoid injury to important structures.

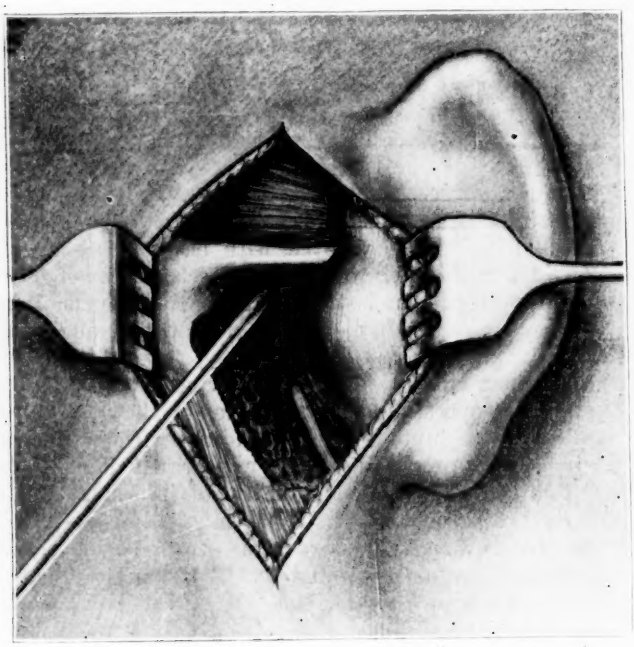

Fig. 1.—Modification of the simple mastoid operation, illustrating a radical departure from the classical operation of Schwartze. The exposure of the facial nerve in its osseous canal is incidental and not a necessary accompaniment of the operation.

To avoid mutilating the periosteum and thereby destroying its value as an agent in the repair of bone, it is now carefully pushed forward and backward with Langenbeck's periosteotome, so that the planum mastoideum is freely exposed and the hemorrhage controlled. The soft parts are now retracted with a self-retaining retractor, thus exposing the underlying bone and the operative field and at the same time the superior posterior segment of the bony meatus with the spina suprameatum and fossa. The exposed surface of bone is now carefully examined for a carious spot or sinus and for the minute dark-blue points over the cortex in the vicinity of the antrum—the so-called "shaven beard" appearance. The anatomic and surgical landmarks, as the spina suprameatum and fossa, linea temporalis, the squamomastoid suture, etc., are carefully noted. The primary opening in the bone is made with a gouge of large width, driven by blows from a suitable mallet.

Within the mastoid cavity the operation was continued by means of large strong curettes and Rongeur forceps. Every portion of the mastoid process that seemed to be affected to a serious degree was removed. After removal of the extreme mastoid tip with the Rongeur, the cells as far back as the posterior border of the sigmoid groove, together with the diploic cells at the posterior root of the zygoma, were carefully removed with the curette.

The next step in the operation was the removal of the parallel with the general direction of the auricle, exthe roof and floor of the canal. This is a distinct feature of the modified operation. Under a brilliant illumination the bone is removed with the Rongeur forceps as deeply as the facial ridge, after which the electromotor burr is employed to smooth the facial spur. There is practically no danger of wounding the facial nerve by this procedure if performed carefully.

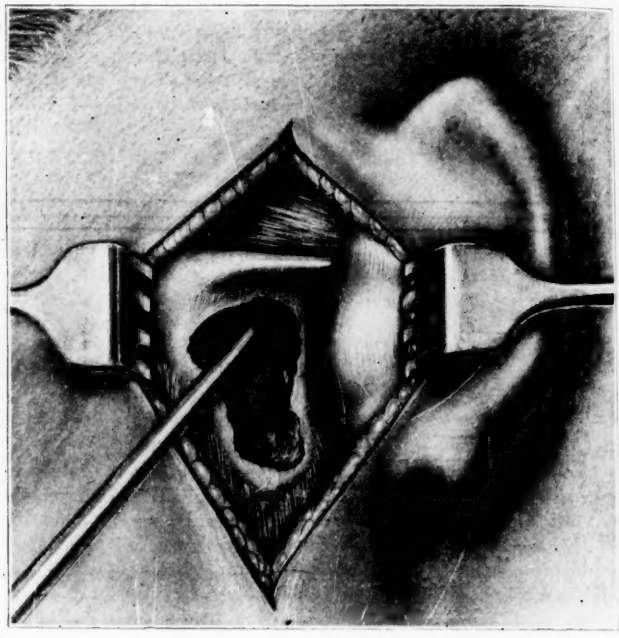

Fig. 2.—The original Schwartze operation.

It is presupposed that the surgeon, before attempting to perform a mastoid operation on a living person, has rehearsed it many times on the cadaver and is familiar with the anatomic and surgical landmarks of the temporal bone. It is also highly important that the surgeon should familiarize himself with the use of the chisel and gouge before attempting to perform such an operation. There is probably no other surgical feat which requires a more perfect knowledge of the technic of chiseling than does this one.

The final step in the process consists in packing the posterior membranocartilaginous canal wall firmly backward into the osseous cavity, in close contact with its walls, where it is securely held in position by a tampon of iodoform gauze inserted into the auditory canal. This is an extremely important step, since by this procedure we have a cavity, one-half of which is composed of soft tissues, instead of a cavity in the mastoid whose walls are entirely of bone, as is the case in the classical operation.

ADVANTAGES OF METHOD.

By this method bony cavity is practically disposed of, and hence we have union by first intention, instead of healing by granulation. When the gauze packing has

wound completed, the mastoid incision is closed with sutures and the usual dressings are applied; the small gauze wick being allowed to remain in position until the soft parts are adherent to the bony walls. Adhesion is usually looked for at the first dressing subsequent to the operation.

It is evident that this process differs materially from Schwartze's original operation, first, from the fact that the posterior osseous canal wall, together with a part of the roof and floor of the bony canal, is removed, and, secondly, from the fact that the soft structures are carefully pressed back into the cavity thus made. In the simple mastoid operation, as performed to-day, the osseous cavity is allowed to fill up by granulation tissue from the bottom, or with a blood clot, according to the method of Dr. Clarence J. Blake. But in the modified operation, as before stated, the wound cavity is obliterated by the soft structures, which are snugly fitted back into it in much the same manner as a hand fits into a glove, thus leaving no space in which to granulate.

The objection has been raised repeatedly that the antrum is not properly drained by this method, to which we answer that the wound is drained by inserting a small gauze tape or cigarette drain into the antrum. We drain the middle ear by a free paracentesis, beginning in the attic, so as to drain that cavity as well as the aditus ad antrum, thence sweeping through the posterior fold of the membrana tympani, and terminating on a level with the floor of the annulus tympanicus. With the exception of the tampon in the external auditory canal and gauze pad within the concha, the dressing of the wound differs in no material way from the dressing employed in the Schwartze operation. It is often advisable to remove the outer dressings on the following

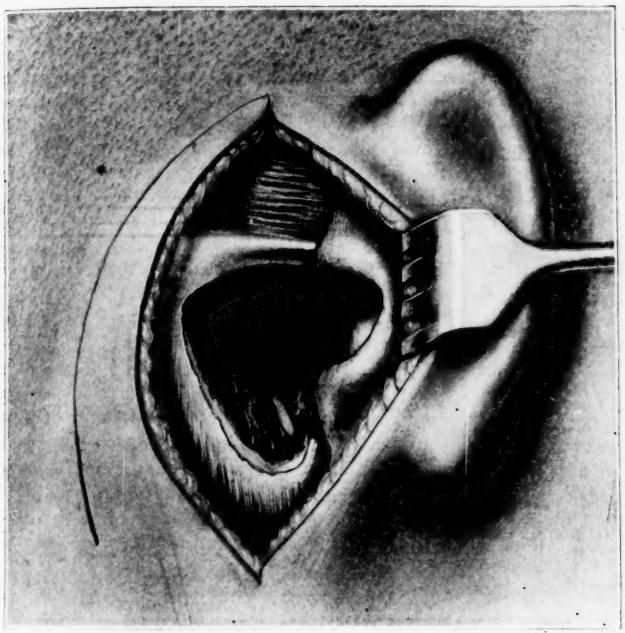

Fig. 3.—The radical mastoid operation (tympanomastoid exenteration or Stacke-Schwartze operation). The mastoid cells, antrum, tympanum, attic and auditory canal are converted into one large osseous cavity with smooth and healthy walls.

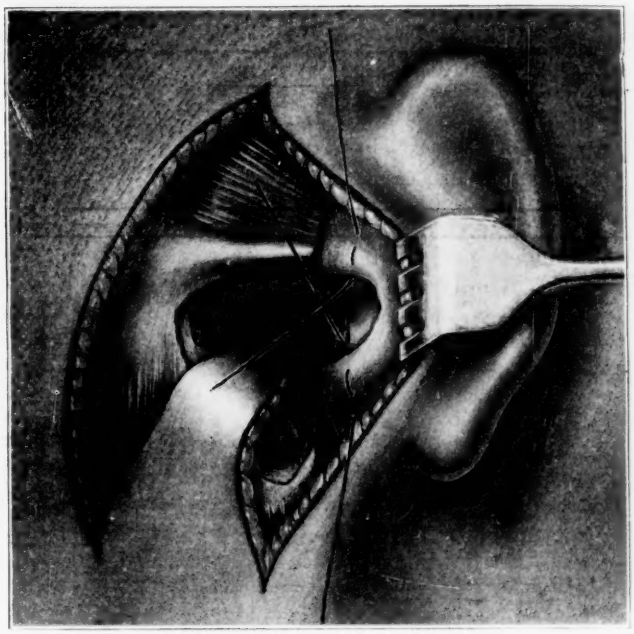

Fig. 4.—The Panse flap operation, with flap of skin dissected from the posterior edge of the mastoid opening and turned into the osseous cavity, thus covering the floor of the mastoid and entire facial ridge with skin.

CASES ILLUSTRATING MODIFIED METHODS.

Age.	Patient. Sex.	Diagnosis.	Duration of Disease, Days.	Time of Subsidence of Tympanic Inflammation After Operation, Days.	Time of Complete Healing of Primary Mastoid Wound, Days.	Condition of Hearing.	Remarks.
58.	F. G., female....	Otitis media suppurativa subacuta sinistra complicated with acute mastoiditis.....	112	6	8	Unimpaired.	Patient refused operation for long time.
38.	J. M., female....	Otitis media suppurativa acuta sinistra complicated with acute mastoiditis....	49	9	9	Unimpaired.	Patient refused operation for some time.
28.	C. L., female....	Otitis media suppurativa acuta dextra complicated with acute mastoiditis....	6	12	10	Slightly impaired..	
28.	M. F., male.....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	60	17	17	Slightly impaired..	Patient presented himself for exam. on 8th week of disease.
12.	P. G., male.....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	6	4	10	Unimpaired.	
26.	H. S., male.....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	80	28	16	Slightly impaired..	Patient first came for treatment in 8th week of disease.
14.	D. G., male.....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	7	7	7	Unimpaired.	
40.	L. A., female....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	25	8	8	Unimpaired.	
40.	H. S., female....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	18	3	10	Unimpaired.	
38.	B. L., female....	Otitis media suppurativa acuta dextra complicated with mastoiditis.....	35	6	12	Unimpaired.	

day if they have become saturated and stiffened with secretions from the wound. Unless the patient has pain, with a sharp rise in temperature, or there is a foul odor about the wound, or other unfavorable manifestations, the tampon in the auditory canal and the gauze tape in the mastoid should remain undisturbed for three or four days. When the gauze tampon is removed from the external auditory canal at the first dressing, it will generally be found moistened with secretions. If the secretion is profuse, the canal should be douched with a warm corrosive sublimate solution (1-5000). If slight it may be dried out with sterile cotton on a cotton-tipped probe, after which the iodoform gauze tampon is again introduced. At the third dressing, in from 10 to 12 days, the tampon is removed from the canal and the middle ear is dusted with thymoliodid (aristol), when the patient is generally discharged cured.

The great benefit derived from this legitimate operative procedure is the unquestioned shortening of convalescence, and this advantage alone entitles it to careful consideration. As to its cosmetic effects, no deformity whatever results from it.

We report 10 cases illustrative of the practical results of the operation described. Of these cases the best results as to time of recovery, including complete healing of the wound, were obtained in 7 days in one instance. The longest period of convalescence was 17 days, demanded in only one case. There were three cases of recovery in 8 days, two in 10 days, two in 12, and one in 16.

DISCUSSION.

DR. F. B. SPRAGUE, Providence, R. I., said that Dr. Plummer's operation is certainly useful if healing can be obtained in the short time Dr. Plummer says. Last year at the American Otological Society, Dr. Sprague said he reported 200 operative cases of mastoid and gave the length of time of healing of the different cases. He did not remember the exact figures, but in round numbers about one-third were healed in less than 14 days; one-third between 14 and 20, and the other third beyond that time. When he began mastoid work the method in vogue was to leave the wound open to heal by granulation. By this method many wounds would heal slowly and fill with granulation tissue which needed frequent curetting, and occasionally a secondary operation. The principal thing which induced him to close the mastoid was the large area exposed to infection. The open wound is long and gaping, according to the length of the incision, and perhaps three-eighths to one-half an inch on both sides and consequently a constant secreting surface open to infection. His first mastoid operations in private work were in 1892, and he sewed up the wound and put in drainage, using the blood clot method as described. He has also used the blood clot method Dr. Blake described. This, however, is applicable only to a limited number of cases and under certain restrictions. Some things in the use of the blood clot which must be regarded are the preparation of the patient, the technic of the operation, and the conditions found on the inner wall. If there is an inflammatory condition, or necrosis of the inner wall which shows an inflammatory condition of the outer or sinus wall or meninges, it is not safe to close the wound for primary blood clot because there is secretion which is infectious and will invade the blood clot, which will become infected and break down. On the other hand, the modified blood clot is perfectly safe, because, after the wound has been thoroughly cleaned, the cigarette drain is placed in it, and the blood clots around the wick. The wick is removed in three or four days, and if it is clean it is left out. If there is any pus it will show, and it may be necessary to treat by drainage. In these cases the blood clot must not be wet, the mastoid wound must not be irrigated, or the blood clot will be broken down and healing delayed. The use of so-called antiseptics at the operation is one of the hindrances. A solution of 1/2.000 bichloride, or strong carbolic is apt to cause necrosis and interfere with the healing of the wound. Dr. Sprague has given up these antiseptics and uses nothing but a sterilized saline solution. He believes in asepsis to keep the organisms away. Saline solution is non-irritating and does away with the danger of causing irritation and soreness around the wound, as do most antiseptics. Another thing; after the wound has been closed there will be a discharge of blood serum from the blood clot when the modified blood clot is used and this must be wiped away with sterilized cotton. This will continue for two or three days, when the wound does not need to be touched again. In this condition the wound is perfectly open and, if any infection takes place in the tympanum, drainage through the mastoid can be taken care of easily. It is rare to have anything further to do with operative procedures. An important thing in mastoid operation is to open the tympanic membrane first, no matter how many times it has been opened previously, and slit it from bottom to top, getting thorough drainage of the tympanum.

DR. J. F. BARNHILL, Indianapolis, referred to Dr. Plummer's statement that he sometimes removes the bone very widely, in one case he even included the zygomatic cells. It is well known how extensively within the mastoid structure the infection may spread, and how extensive must be the operation in order to cure the case. Hence, in such cases as Dr. Plummer described in which there is a large postoperative wound, Dr. Barnhill said he could not understand how it is possible for Dr. Plummer, by means of gauze tampons inserted into the external meatus, to place the posterior wall of that meatus into a position so far posterior to its normal situation. The difficulty sometimes met in the postauricular flaps, when cut as in radical mastoid operation, in keeping them in place against the denuded bone until adhesion takes place, is well known. This difficulty arises because the flaps contain resilient pieces of cartilage, and on this account it is becoming more and more the practice to remove all portions of the flaps with the exception of the skin itself. Indeed it seems to Dr. Barnhill that it would be impossible (in view of the fact that Dr. Plummer's operation requires no incision of the posterior meatal wall), even when only a small opening in the bony structures of the mastoid has been made, for the operator to crowd the posterior meatal wall backward far enough to bring it into close opposition with the posterior wall of the mastoid cavity, and to hold it there until a union of the two takes place. Since Dr. Plummer reports the successful performance of this feat which seems to Dr. Barnhill to be entirely impossible, he would appreciate it greatly if Dr. Plummer would explain this step of the technic more fully.

DR. G. L. RICHARDS, Fall River, Mass., objected to Dr. Plummer's use of the word paracentesis. Incision of the drum membrane is meant. He would like to have the term incision of the drum membrane take the place of the word paracentesis.

DR. E. M. PLUMMER, Boston, said that in the 10 operations, which he had performed, no deformity of the auricle was noticed. Neither did he notice any facial paralysis. It has been only five or six months since he commenced performing the operation in this way, but so far he had not been called on to do a secondary operation. The value of this procedure in cases of acute mastoiditis is well established. In many of the chronic cases on the other hand, in which there is caries of the ossicles and attic, complicated with cholesteatomatous masses, he should prefer the tympano-mastoid exenteration or radical operation. The average time of healing of the middle ear has varied from three to four days. Unless the patient has pain or there is decided rise in temperature, the cigarette drain should remain undisturbed for three or four days. In reply to Dr. Richards, he said that by the word paracentesis he means a free incision of the membrana tympani, beginning in the attic and terminating on a level with the floor of the annulus tympanicus. The posterior membrano-cartilaginous canal wall is pushed backward into the osseous cavity, where it is held in position by a tampon of idoform gauze inserted into the auditory canal and a gauze pad is applied to the concha and a pressure bandage applied. So far he has had no difficulty in securing adhesion between the cartilaginous canal and the osseous cavity.

A PATHOLOGIC STUDY OF SEVEN CASES OF PARALYSIS WITHOUT GROSS ANATOMIC CHANGE

IN RELATION TO THE CAUSE OR CAUSES OF UREMIC HEMIPLEGIA.*

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The following report embodies the results of a pathologic study of seven cases of paralysis associated with chronic kidney disease, such as are not infrequently regarded as of uremic origin, in which no gross anatomic change was found to account for the paralysis. These cases were studied with a view of determining, if possible, the cause, or causes, of paralysis, as we observe it, in persons brought to the hospital who lived under observation but a short time, and who present paralysis which can not be attributed to cerebral hemorrhage, with which the evidences of grave nephritis are often associated.

In Cases 1, 2, 3, 4, 5 and 7, the findings warranted a diagnosis of cerebral syphilis, and in Case 6 the lesion, although not entirely characteristic of syphilis, pointed to a similar diagnosis. In this case there was much arterial change, and the perivascular spaces of the paracentral cortex were markedly distended. In Cases 4 and 2 microscopic areas of softening were found in the cortex. In one section from the paracentral region in Case 4 only one of these areas was observed. In a section from the paracentral region from Case 2 two small areas were found in one field. In all probability these cases were of syphilitic origin.

The microscopic areas of softening just referred to have an important bearing in explaining cases of paralysis in which no gross lesion is observable. Even in a microscopic study of the nervous system they could readily be overlooked. Though these areas are very small, perhaps only the size of a point of a pin, it is conceivable that if numerous, they could bring about some distinct alterations in the functions of the cortical nervous tissue, and sufficient indeed to cause paralysis. It seems highly probable that this lesion is responsible for at least some cases (what proportion it is impossible to state) of so-called uremic hemiplegia.

In a previous communication[1] I described these necrotic foci in connection with double hemiplegia. They were present in the paracentral region, and were associated with a disease of the wall of the blood vessels, round cell infiltration of the pia, and other syphilitic lesions. While it is well known that areas of softening occur in various portions of the brain, they are usually extensive enough to be recognized by the naked eye. More interesting and important are the minute areas of necrosis which are visible only under the microscope. These findings must modify the views previously held about uremic hemiplegia and other forms of hemiplegia in which there is no gross cause demonstrable at the autopsy.

Several theories have been offered to explain the paralysis occurring during uremia, but convincing pathologic evidence is lacking to a great extent. In few of the cases reported careful histologic studies have been made, and the reports of cases without such studies are valueless as evidence.

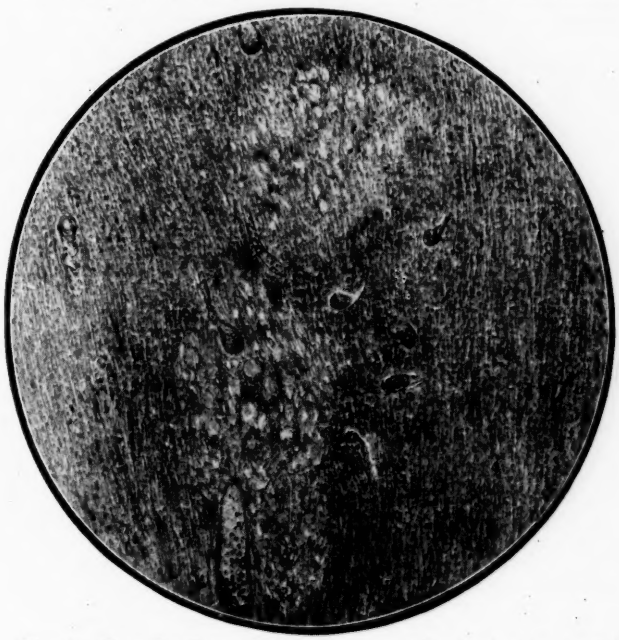

Fig. 1.—Case 2. Two microscopic areas of softening in the left paracentral region.

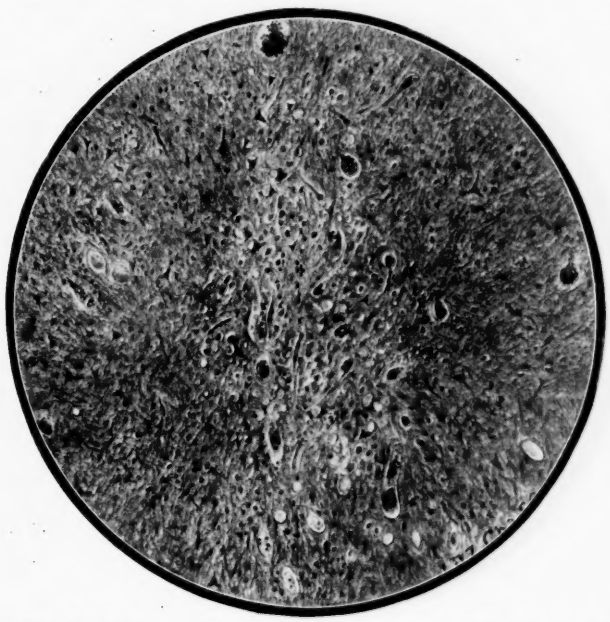

Fig. 2.—Case 4. One microscopic area of softening in right paracentral region.

The mechanical theory, which explains the paralysis of uremia as due to cerebral edema, was first advanced by Traube. Raymond,[2] Tenneson,[3] Chantemesse,[3] Leichtenstern,[4] and others found cerebral edema at the autopsy. Le Corche[4] and Tallamande[4] claimed that the edema is sometimes localized, a view supported by Pätsch[5] and Charpentier.[6] Le Calvé[4] believed that the paralysis is caused by a fugacious edema.

The toxic theory, which holds that the cerebrospinal fluid is toxic and elective for the nerve cells, was ad-

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Philadelphia General Hospital and from the Department of Neurology and Laboratory of Neuropathology, University of Pennsylvania.

1. Am. Jour. Med. Sci., May, 1906.
2. Rev. de Med., 1895, p. 705.
3. Rev. de Med., 1885, p. 935.
4. Article by Le Calvé: Arch. gen. de Med., 1903, p. 577.
5. Ztschr. f. klin. Med., 1881, p. 209.
6. Arch. gen. de Med., 1887, p. 1.

vanced by Bouchard,[7] and supported by Landois,[4] Lanbuscher[4] and Ziehen.[4] Castaigne[8] claims to have demonstrated by certain experiments that the cerebrospinal fluid taken from patients suffering from nervous uremia contained elements which were toxic for nerve cells. He injected into the cerebral hemisphere of guinea-pigs fluid obtained by lumbar puncture in cases of nervous uremia. Four pigs thus treated with 1¼ or 1 cubic centimeter of this fluid, died in convulsions in one to ten hours. The researches of Leane, Sicarde and Widal are quoted by Castaigne[8] as showing that normal cerebrospinal fluid injected in a similar manner was not toxic.

It is well-known that many cases of uremic hemiplegia have been reported without demonstrable lesions. Baillet[9] examined 37 cases and found no lesion in 29. This fact has led to the conclusion by some that the paralysis is due to autointoxication. Such was the conclusion of Brodier,[9] who reported 2 cases.

The paralysis of uremia has been attributed to arteriosclerosis by some observers, and this is in some cases undoubtedly the cause.

D. J. McCarthy[10] believes that many of the cases diagnosed as uremic hemiplegia, in which the autopsy shows extensive cerebral arteriosclerosis, the paralyses are not the result of a toxemia of the cortex, but rather of a malnutrition of the cortical cells due to the obliteration of the vessels supplying the cortex. The nerve cells under these conditions being badly supplied with nourishment on account of the deficient circulation, may become temporarily exhausted and thus produce, when situated in the motor areas, a temporary hemiplegia.

In a number of cases reported by Raymond[2] atheroma of the cerebral arteries was present. Raymond believed that uremic paralysis is due to an edematous state of the brain substance, which either awakens an old lesion, or produces certain vascular phenomena. The edema causes, in his opinion, at the site of the capillaries, a sufficient constraint in the circulation, in conjunction with the anemia which is always present in kidney disease, to bring about apoplectic attacks. His experiments in this connection are interesting and worthy of quotation.

Experiment 1.—He removed the left superior cervical ganglion of a rabbit and on the following day ligated the ureters. Four days later convulsions appeared on the right side of the rabbit's body. At the autopsy a notable quantity of fluid was found in the ventricles, and a slight degree of edema which was of a uniform degree on both sides.

Experiment 2.—In a second rabbit he removed the right cervical ganglion and six days later tied the ureters. In 4 days convulsions occurred on the left side of the body. In other words, convulsions appeared on that side of the body controlled by that half of the brain which had been deprived of the influence of its vasomotor nerves.

Experiment 3.—This experiment consisted of trephining a dog and introducing into the cortical region a small crystal of silver nitrate. The animal was paralyzed in the right leg on the following day. A month later the paralysis had completely disappeared. The jugular vein was then ligated on the left side, when shortly the paralysis of the right leg became as marked as on the day of the primary experiment. From this the animal finally recovered, and at autopsy 2½ months later an area of softening was observed at the site of the operation, and there was slightly more congestion of the left side of the brain than on the right.

Experiment 4.—This experiment consisted in trephining a dog and injuring part of the cortex on the left side by means of a thermocautery. Paralysis of the right posterior leg followed, gradually disappearing after 30 days. At the end of a month the jugular vein was ligated on the left side. Following this operation there was a recurrence of slight paralysis of the right leg which diminished at the end of a month and finally disappeared. At autopsy a lesion of the cortex was observed, but no difference between the two hemispheres from the point of view of the state of the circulation.

These experiments, he claimed, demonstrate that circulatory disturbances have an influence on the reappearance of old paralyses of cortical origin.

Weisenberg[11] concluded from the study of a case diagnosed as uremic hemiplegia that changes may be produced in the nerve cells of the brain and spinal cord by toxic processes like uremia. He has demonstrated acute degeneration of the motor filters of the brain and cord in association with cellular degeneration of the cortex.

In a few autopsies actual lesions have been demonstrated. Fürstner[12] reported a case with a history that five months before coming under observation the patient suffered from two attacks of right-sided paresis following the uremic state. At the autopsy two small foci of softening in the corona radiata and in the pons were found, and in this case he also demonstrated degeneration of both crossed pyramidal tracts and one direct pyramidal tract. In the case reported by Raymond[2] an old hemorrhagic focus was found in the right lenticular nucleus. No secondary degeneration was observed.

The changes in the nerve cells have been studied with a view to throwing some light on this subject. Lugaro[13] found in a case of uremia, with symptoms simulating tumor of the frontal lobe, chromatolysis and pigmentation of the cortical cells. Ewing[14] examined the central nervous system in two cases, and the cord in three cases of eclampsia, but was unable to find any peculiar cellular lesion excepting some nuclear changes of the Purkinje cells in one case. He reports also the cellular lesions found in six cases of uremia, in only one of which was there paralysis. He was able to conclude that uremia in the human subject is associated with change in the chromatic substance of the nerve cells. The spinal cells do not show any change as a rule, the greatest change appearing in the medullary nuclei, especially in the tenth nuclei. Ewing[14] quotes the experiments of Acquisto, Sacerdotti, Cerletti and Sambalino. Acquisto[14] and Pusateri[14] found different stages of chromatolysis in the cortical cells of the brains of dogs suffering from experimental uremia. Sacerdotti[14] and Ottolenghi[14] did not confirm these findings. The results obtained by Donetti[15] closely correspond to those described by Acquisto and Pusateri. Ewing[14] quotes also the experiments of Gabbi, who demonstrated a perinuclear chromatolysis with a homogeneous condition of the nuclei in the cells of the cerebral cortex of guinea-pigs and rabbits after bilateral ligation of the ureters. Marinesco is quoted by Chauffard[16] as having discovered chromatolysis of the nerve cells, and alteration of the nuclei by the Nissl method in uremia. The original reference could not be found.[17]

(*Continued on page 1713.*)

7. Jour. des practicien., 1904, p. 131.
8. Comp. rend. de la Soc. de Biol., 1900, p. 907.
9. Article by Brodier: Arch. gen. de Med., 1900, p. 475.
10. Proc. Coll. Phys. Phila., 1904, p. 248.
11. Jour. Nerv. and Ment. Dis., July, 1904.
12. Neurol. Centrbl., 1898, p. 607.
13. Rev. Neurol., 1900, p. 669.
14. Article by Ewing: Arch. of Jour. Neurol. and Psycho-Pathol., 1898, p. 351.
15. Comp. rend. de la Soc. Biol., 1897, p. 502.
16. La Bull. Med., 1902, p. 203.
17. For further literature the reader is referred to: Lancereaux: L'Union Med., 1887, p. 705; and Colleville: Gaz. Hebdom., 1900, p. 673.

HERNIA OF THE OVARY AND TUBE.*

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Having already published an article on hernia of the tube without the ovary,[1] and having presented a paper on hernia of the uterus to the American Gynecological Society, I wish now to submit, tabulate and analyze the recorded cases of hernia of the ovary and Fallopian tube, leaving the subject of hernia of the ovary without the tube for a future paper.

Through the kindness of my friend, Dr. Cullen of Baltimore, I am able to present the following case with a drawing of the contents of the sac.

M., Cambridge, March 26, 1902. Child eight years of age suffering from left inguinal hernia. The hernial opening was about 1.5 cm. in diameter. The ring was exposed with considerable difficulty. A small oval mass was felt in the ring and the presence of the ovary immediately thought of. On opening the sac the ovary and tube were found adherent to it (Fig. 1). It was impossible to return them to the abdomen without removal. They were tied off and removed with the adherent sac. The operation was completed in the usual way.

HISTORICAL SKETCH.

The first mention of hernia of the pelvic organs was made by Soranus, of Ephesus, early in the second century. His work on "Diseases of Women," written in Greek, was translated into Latin by Cælius Aurelianus in the fifth century. It is the only gynecologic work preserved from antiquity. He describes a case in which "the intestine, preceded by the ovary, descended into the labium," evidently an inguinal hernia.

The literature of the subject really begins with Döring,[2] followed by Oelhafen[3] and Oneidas.[4] In 1716 Louis Leger de Gouey, of Rouen, described a case of intrahernial tubal pregnancy. In 1755 Haller[5] quoted a case of Bessiere, a celebrated surgeon of Paris a century before, who found the ovary and the fimbriated portion of the Fallopian tube, together with intestine, in an inguinal tumor. He also cited a case of ischiatic hernia of the uterus, ovary and tube on which Papen operated. Petit, in his anatomic works, also quotes an early case by Verdier. A case of double inguinal hernia successfully operated on by Percival Pott in 1756 has been freely quoted. In 1759 Camper, at Amsterdam, showed the left ovary escaping from the abdomen by the ischiatic notch, and, according to M. Rougemont, he noted a case in 1765 of the ovary in an inguinal tumor.

In 1768 Balin[6] speaks of the case of a woman on whose body an autopsy was performed at the Salpètrière. One of the ovaries, in which there was "a germ of fecundity," was found engaged in the ring. In 1779 Desault found in the cadaver of a woman the left ovary, the tube of the same side and the womb enclosed in one sac. Again, twenty years elapsed before Lallement makes a similar observation at the Salpètrière. Then Lassus, in 1809, cites three examples of hernia of the ovary in the inguinal canal.

The illustrious surgeon, Deneux, in 1813, having successfully treated an inguinal ovarian hernia, made it the subject of a treatise, in which he cites twelve cases, of which nine were inguinal. He lays special stress on the congenital nature of the affection and the difficulties of diagnosis. In 1840 Velpeau described this condition under the name *"ovarioncie."*

Eduard Hufschmid[7] reported a case of femoral hernia of ovary and tube. T. W. Hulke[8] described the tearing of a hernial sac by taxis and the subsequent finding at autopsy of the contents, including the uterus, in a new-formed extraperitoneal space. Schillbach[9] describes an incarcerated right ischiatic hernia, with details of the autopsy. Observations were published by Maisonneuve, Guersant, Wibaille and Loumaigne.

In his thesis (1869) Loumaigne dwells at considerable length on symptoms and diagnosis, and in 1870 Frank Hamilton and Terry[10] published twelve new observations, followed shortly by more complete works. Antonin Martin reported a case of inguinal hernia of the right ovary before the Société de Médicine, Nov. 3, 1871, and Courty[11] mentions three cases of ovarian hernia. In 1871 Englisch[12] collected thirty-eight cases of ovarian hernia, of which twenty-seven were inguinal. His work contains interesting deductions on the pathogeny of congenital and acquired hernia. In 1873 Puech[13] published his first memoir. In 1874 Wibaille (Paris) brought out a thesis on the subject of the various forms of hernia of the tube and ovaries. In 1878 (November) and in 1879 (June) Puech published a second

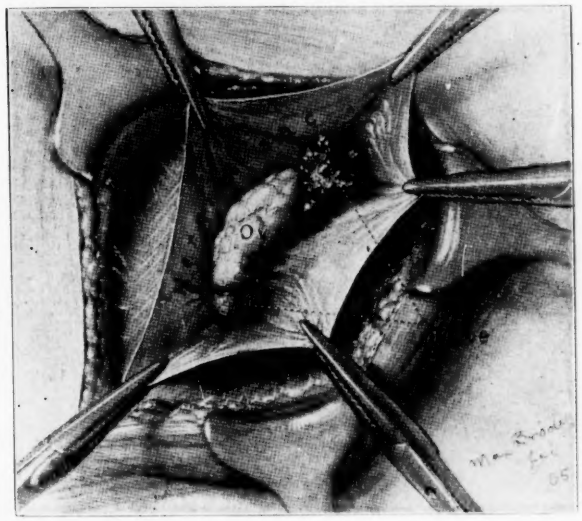

Fig. 1.—T. S. Cullen's case. Ovary and tube in an inguinal hernia

article in the *Annales de Gynécologie,* which is without doubt the most complete work ever published up to this time on this subject.

In 1882 Barnes read a paper before the Medical and Surgical Society of London on the physiology of ovarian hernia. This was inspired by observations already made by others. In the same year appeared a work on hernia of the ovary by G. Langton,[14] based on sixty-seven cases which he had observed almost exclusively among children, of which twenty-seven were accompanied by enterocele. In 1887 Thomas made inguinal and ovarian hernia the subject of his inaugural thesis (Paris), and devotes a few pages to the differentiation of ovary and testicle in subjects suffering from a vicious conformation. Microscopic examination justified the discussion.

In 1889 Lejars[15] published a work on neoplasms of the herniated ovary. Brunner[16] published a very complete work on hysterocele in 1889, and in the same year Hagner[17] published an article on the same subject. In 1890 Boudaille (Paris) made a further mention of inguinal hernia. Roux,[18] of Lausanne, published an article on hysterocele in 1891, which was followed by one by Ed. Schwartz[19] in 1892. Works on the same order

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

have since been published by Jules Boeckel,[20] by Brohl,[21] by Defontaine, Rosanoff[22] and Legueu.

In 1893 Lejars[23] published a second article on hernia of the Fallopian tube without the ovary. The history of a patient operated on by Jaboulay comes next in order, the histologic examination having demonstrated the complete absence of ovaries. Inguinal hernia of the ovary was the subject of a memoir by Manega,[24] and in 1895 of an interesting treatise by Kousmine, of Kasan. Work by de Vaucher,[25] of Lyons, and others followed.

In recent years special attention seems to have been given to hernia of the genital organs in children. In 1897 Menciere[26] published five observations on hernia in very young children and laid special stress on the facility of mistaking the diagnosis. In three articles, published in 1897 and 1899, Wiart makes a special study of the pathogeny of hernia of the adnexa, particularly that of the tube. In 1897 Charon records a case of hernia in a child 3 years of age. He speaks of the absence of danger attending an operation at this age.

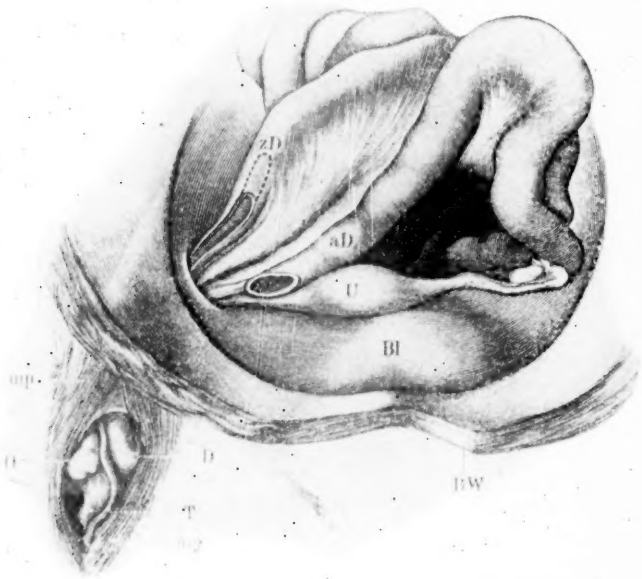

Fig. 2.—Gusenthal's case of obturator hernia of the ovary and tube with intestine. The uterus is drawn down toward the ring. The drawing was made from findings at the operation and at the autopsy. D, Strangulated intestinal loops; O, Ovary; T, Tube; m. p., Pectineus muscle; B. W., Abdominal wall; Bl., Bladder; U, Uterus; aD, Abducent portion of the intestine; zD, Deferent portion of the intestine.

In 1898 Professor Bernier[27] published a comprehensive work, embodying all the works of his predecessors and two new observations on hernia of the ovary. At the same time Moser, of Berlin, made this the subject of his inaugural thesis, and H. Bernard Browne[28] made his valuable contribution to the subject.

In 1899 Martin[29] published an elaborate article on hernia of the ovaries and adnexa. An extensive thesis on hernia of the uterus and adnexa was delivered in 1900 by Ogé (Paris). In 1901 Dr. Paul F. Morf[30] published a valuable article. He reports twenty-four cases, including one of his own.

ETIOLOGY.

It is self-evident that three factors are necessary to the production of any hernia:

1. There must be a port, sufficiently patent or sufficiently dilatable, through which an organ may become herniated. Such an opening is the primary cause of every hernia.

2. There must be an organ so situated and sufficiently mobile that it may be forced into that port. This determines also the contents of the hernial sac.

3. There must exist a force sufficient to move the organ into the port. This force is the intra-abdominal pressure. It is present in all individuals, but is subject to sudden and extreme variations. It may be termed the immediate cause.

Since a weak or patulous ring is the primary cause of hernia, it is of interest to note that the inguinal and umbilical rings are frequently patulous at birth, and that a large proportion of herniæ through these rings are congenital or occur at an early age. On the other hand, the femoral, obturator and ischiatic herniæ are usually acquired at a late period of life. Of particular interest are the causes which determine the entrance of the ovary, tube or uterus into a hernial sac. The testis in its descent normally passes through the inguinal ring, but the descending ovary passes the orifice on its way to its position in the pelvis. Sometimes this descent is very slow, in which event the organ remains for a considerable period in a position favoring hernia. The Fallopian tube and even the uterus may follow the ovary into a sac or may precede it.

Congenital herniæ of the ovary other than inguinal do not occur, for the reason that the anatomic relations do not favor patulous orifices and that the ovary comes near to these openings only at a considerable period after birth. That the position of the ovary may be a factor favoring hernia is evidenced also by the large number of ovarian herniæ occurring in cases of congenital malformation, as in cases of hermaphroditism, bicornate uterus, absent uterus, etc. In these cases the descent of the ovary is retarded or arrested in a position favoring entrance to the inguinal ring.

In some cases of hermaphroditism, in which the individual approaches the male type in other respects, it may also approach that type in this, that the ovary is affected by the same influences that determine the normal descent of a testicle into the inguinal ring. Indeed, this is a reasonable supposition when we consider that many of the ovaries resemble testicles so closely that a microscopic examination is necessary to make a differentiation. Many times in such cases have supposed ovaries been proven to be testicles.

In an older person atrophy of the tissues with fat reduction, as in the connective tissues about the vessels, accounts for the weakening of the various hernial orifices, in which case muscular exertion, either long continued or violent, may produce a hernia. Pregnancy or tumor by distension of the abdominal wall may favor hernia formation through the usual rings and even produce diastasis of the muscles of the wall, with a resulting ventral hernia. Pregnancy, tumor or uterine displacement may also so displace the ovary, tube or fundus uteri that its entrance into one or other hernial orifice is facilitated.

By adhesion to intestine or omentum the pelvic organs may be fixed in a position favoring entrance into a pre-existing sac. It is probable, also, that in many cases of hernia, either acquired or congenital, the intestine and omentum may have occupied the sac for a period, and, having slipped back into the abdominal cavity, may have allowed the ovary, tube or uterus to occupy the sac prepared for its reception.

It is not impossible, when the Fallopian tube is the organ first herniated, that the hydatid of Morgagni is the object first crowded through the ring. This small cyst is more freely movable than the tube and is of a size and consistency well adapted to be forced through a small opening. The tube would readily follow.

MORBID ANATOMY, COMPLICATIONS, SIGNS, SYMPTOMS AND DIFFERENTIAL DIAGNOSIS.

These have been so thoroughly treated by the authors mentioned in the historical sketch and others, and furthermore are so diverse, that I shall speak only of the general facts involved.

Morbid Anatomy.—The morbid anatomy is that of any hernial sac into which an ovary, tube or uterus has passed. The genitals in the sac and those in the abdomen may be normal, except as to position, or any of the known pathologic conditions may exist. There may be malformation, strangulation, adhesions, inflammation, infection, suppuration, serous or sanguinous exudation, tumor or pregnancy, either tubal or uterine. Also these conditions may be complicated by the presence of other organs, normal or pathologic, in the sac.

Signs.—The signs are the presence of something in a hernial sac that might be a pelvic organ, verified by information as to the position of those organs gained by bimanual and instrumental examination.

Symptoms.—The symptoms are the general ones usual in patients suffering from pelvic disturbances and those due to the special conditions. These special conditions are so various that their symptomatology can not be detailed here with profit. They depend on (1) the variety of hernia, the inguinal being the most frequent; (2) the genital involved, the ovary being oftenest found and being the organ that during functional activity gives the most characteristic symptoms; (3) the age of the patient, because between puberty and the menopause the symptoms are likely to be most pronounced.

Any of the special morbid conditions, as malformation, adhesion, infection, strangulation, tumor or the presence in the sac of other organs, will often produce such marked disturbances as completely to overshadow and mask those produced by the incarcerated uterus, tube or ovary.

Differential Diagnosis.—The conditions which may be mistaken for hernia of ovary, tube or uterus are (1) undescended testicle in an hermaphrodite; (2) small intestinal hernia; (3) epiplocele; (4) tumors in the sac, as fibromata, lipomata, carcinomata, etc., especially tumors of the round ligament; (5) hydrocele of the canal of Nuck; (6) inguinal or femoral tumors.

The treatment should be the radical cure of the hernia by operation. Special conditions may make reduction by taxis and the subsequent use of a truss or abdominal supporter advisable. The results of operation in uncomplicated cases should be good. The danger of operation in complicated cases will usually be much less than the danger involved in the persisting condition.

CASES OF INGUINAL HERNIA CONTAINING BOTH OVARY AND TUBE.

BALIN:[6] The case of a woman on whose body an autopsy was performed at the Saltpêtrière, and where one of the ovaries, in which there was a germ of fecundity, was found engaged in the ring (evidently a tubal pregnancy).

BELBIN:[31] Patient, aged 7 months; irreducible inguinal hernia, strangulated; operation; opening the sac; bloody fluid escaped, and left ovary was found in the sac, engorged with blood; sac contained also the fimbriated extremity of the tube, which was black and swollen. The entire mass was removed. Recovery.

BILHAUT (M.):[32] Infant of 3 months; left inguinal hernia. Strangulation and mortification of ovary and tube. Ovariotomy, salpingotomy, radical cure. Recovery.

BLACK (CARL):[33] Patient, aged 40; six children. Attacks of pain in right inguinal region, and small tumor. Usually reducible by dorsal position. Final attack, irreducible and painful. Operation. Sac contained right ovary and tube, Meckel's diverticulum, appendix and intestines in a pus cavity (organs partly necrotic). Removed organs, including about six inches of intestine. Recovery.

BLOODGOOD:[34] Case 1.—Patient, aged 45; acquired inguinal hernia; operation; sac contained right tube and ovary; reduced; recovery.

Case 2.—Patient, aged 38; acquired inguinal hernia; operation; sac contained left ovary and tube; reduced; recovery.

BOECKEL:[35] Patient, aged 6 months; left inguinal hernia; irreducible; operation; sac contained left ovary, and a portion of the corresponding tube. The herniated mass was removed and patient recovered.

BRAUN:[36] Case 1.—Right inguinal hernia in a child aged 6 weeks; irreducible. Sac contained right ovary and fimbriated extremity of tube. Right ovary in state of degeneration; removed. Recovery. Several weeks later a swelling (probably containing the ovary) was noticed on the left side. The child died later of an intercurrent disease.

Case 2.—Right inguinal acquired hernia; woman, 47 years old; irreducible. Contained right ovary and tube. Excised. Recovery.

BRISTOW:[37] Patient, aged 44; acquired left inguinal hernia; strangulated; operation; sac contained ovary, tube in which there was an abscess cavity, and round ligament. Sac and contents removed. Recovery.

BROCA:[38] Case 1.—Patient, aged 11; congenital hernia of the left tube and ovary; inguinal; herniotomy. Both organs were replaced, being healthy. Recovery. This case was hereditary, both mother and grandmother having had an inguinal hernia.

Case 2.—Child, aged 3; double congenital inguinal hernia; left hernia of the tube and ovary; excision of sac and adnexa; the tube was surrounded by tuberculous granulations; the right hernia was reducible. Death. Autopsy: No peritonitis. Peritoneal and pleural granulations.

Case 3.—Patient, aged 2; left congenital inguinal hernia of the tube and ovary; radical cure of hernia.

Case 4.—Patient, aged 4; double inguinal hernia; left hernia of the ovary and tube; at the operation the tube was found near the internal ring and the ovary just below the tube; these organs being healthy, were replaced. Recovery.

Case 5.—Inguinal hernia of the left ovary in a child several months old, operated on for inguinal hernia of left kidney. Microscopic examination showed the supposed kidney to be the left ovary accompanied by the tube.

BUCURA:[39] Patient, aged 34; acquired right inguinal hernia; operation; sac disclosed besides small intestine, atrophied right ovary, and over two-thirds of the distal portion of the right tube. Recovery. This hernia was discovered during left-sided ovariotomy.

BULLITT:[40] Young woman, who had never menstruated; double inguinal tubo-ovarian hernia, with congenital absence of vagina; the right ovary contained small blood cyst and was enlarged about three times its usual size. The ovary and tube were tied off and cut away. The left tube and ovary were returned into abdominal cavity. Recovery.

CAHEN:[41] Patient, aged 2 months; congenital right inguinal hernia; operation; sac contained right tube and discolored ovary; both organs were removed; the pedicle of the ovary was twisted to an angle of 180 degrees.

CHAMPIONNIERE:[39] Patient, aged 52; right inguinal hernia; small, always painful; left; voluminous, containing ovary, tube, and a small portion of epiploon. Operation first for right; no organs in sac. Recovery. Six months later operation for left. Sac contained left ovary and tube, as well as the round ligament. These organs were excised. Recovery.

CHARON:[42] Patient, aged 3 months; left inguinal hernia; irreducible; operation; sac contained left ovary and Fallopian tube; they were returned into the abdomen. Recovery.

CHIARELLI:[43] Patient, aged 35; had worn a truss since childhood for right inguinal hernia; irreducible; operation; bloody serous fluid in sac containing ovary and abdominal end of tube. They were removed with sac. One-third of the extirpated ovary was normal in structure; the rest was converted into a blood cyst. Recovery.

COOTE (HOLMES):[41] Young woman; symptoms of strangulated hernia; left ovary and part of Fallopian tube were found in sac. Similar formation on right side. Left ovary removed; thickened omentum cut away; patient died on fourth day. Both ovaries were developed; uterus quite absent.

DAMIANOS:[45] Infant, aged 14 months. Left inguinal hernia, containing ovary and tube with torsion of the pedicle. Brownish-red fluid in the sac. Excision. Recovery.

DUPLAY and WIART:[46] Patient, aged 33; left inguinal hernia; first noticed at the age of 7; irreducible; operation; sac contained left ovary and tube; both organs reduced; sac excised; recovery.

ENGLISCH:[13] Patient, aged 39; acquired inguinal hernia; irreducible; symptoms of strangulation; herniotomy; sac contained cystic degenerated left ovary and tube. Both were removed. Death from peritonitis.

FLEISCHMANN:[47] Patient, aged 8 days; congenital left inguinal hernia. At postmortem found to contain tube and ovary.

GAUGELE:[48] Patient, aged 8 months; congenital inguinal hernia; operation; opening of sac, serous contents escaped, disclosing left ovary; abdominal end of tube with firmbriæ; torsion of the pedicle; ovary and end of tube were excised, on account of beginning neurosis; recovery.

GENTH:[49] Patient, aged 34; left inguinal hernia; congenital; operation; sac contained extrauterine fetus, also outside of the abdominal cavity. Since this operation tumefaction still felt, which is without doubt an ovary.

GOFEY:[50] Patient, aged 34; left inguinal region tumor size of a hen's egg, painful. Had tumor since childhood, small, movable and gave it no attention. Had three previous pregnancies; no menstruation for last two months; in two months more the tumor increased to five inches long and four inches wide. Operated. Removed a four months' fetus (female). Recovery. Afterwards a body could be felt, probably ovary.

GRUNERT:[45] Infant, aged 5 months. Congenital left inguinal hernia of ovary and tube. Torsion of the pedicle and strangulation. Excision. Recovery.

GUERSANT:[51] Patient, aged 10; inguinal hernia; operation; sac contained an ovary and part of the tube; it was removed and organs found cystic. Peritonitis and death.

GUINARD and DUDEFOY:[52] Patient, aged 24; acquired inguinal hernia; celiotomy; a sausage-shaped mass adherent to peritoneal sac; mass connected with left uterine horn by a portion of healthy Fallopian tube. Traction on tube drew down corresponding ovary. Tumor was enucleated together with ovary, sac ligated and resected. Recovery. Examination showed tube to have the volume of a large sausage and to have undergone the changes of parenchymatous salpingitis.

HABS:[53] Patient, aged 5 months; strangulated inguinal hernia; operation; sac contained left tube and ovary, with twisted pedicle, and both were in state of beginning gangrene. Herniotomy. Recovery.

HALLEY:[54] Young lady; left congenital inguinal hernia; irreducible; symptoms of strangulation followed by operation. Sac found to contain ovary, broad ligament and fimbriated extremity of Fallopian tube. The tube was divided by ligature and the entire mass removed. Recovery.

HAWKINS:[55] Elderly woman; death from peritonitis. Autopsy revealed elongated uterus, which, with the Fallopian tube formed a canal 14 inches long. The tube and ovary had been lodged for many years in the hernial sac.

HEEGAARD:[56] Case 1.—Patient, aged 4 weeks; congenital inguinal hernia of left ovary, strangulated on account of torsion of pedicle. Left ovary and tube removed. One month after operation there was a swelling in the scar which proved to be the right ovary; reduction was effected by incision into canal of Nuck, which was patent.

Case 2.—Patient, aged 6 months; for five days a tumor as large as a goose egg has been present in the right inguinal region; tumor uneven, dull on percussion, with normal integument; irreducible. Umbilical ring open to size of tip of little finger. Herniotomy disclosed dark fluid with discolored ovary. Further examination of the extirpated mass disclosed the fimbriated end of the tube and part of the broad ligament.

HERMANN:[57] Infant, aged 3½ months. Right inguinal hernia ovary and tube. Torsion of pedicle. Extirpation. Recovery.

HOLST and TILING:[58] Patient, aged 38; right inguinal hernia; irreducible; herniotomy; sac containing tube and ovary removed; recovery. Recurrence of inguinal hernia in the right side about nine months later; radical operation; recovery.

HULKE:[59] Patient, aged 20; congenital hernia; inguinal of both ovaries; atresia of the vagina; left was reducible; truss support. Operation on right side. Sac contained right ovary and Fallopian tube. They were ligatured close to the uterine horn and cut off. Recovery. Probably bicornute uterus.

JORDAN:[60] Patient, aged 37; left acquired hernia; operation; hernial sac was formed from ruptured tubal pregnancy; fetus 7½ cm. long, was removed, with its envelope; then tube and ovary of this side were removed; death twenty-four hours later; at autopsy adhesions between the abdominal ostium of the left tube and a loop of small intestine were found, and on the right side a similar condition existed.

KÖSSMAN:[61] This author reports the case of left inguinal hernia. Sac contained ovary and tube. They were reduced and the sac excised. The right ovary was converted into a large cystoma; the uterus was greatly displaced; recovery.

KRIEGER:[62] Patient, aged 26; right congenital inguinal hernia; irreducible; symptoms of strangulation; herniotomy; sac was found to contain ovary, tube, intestine, ileum, omentum majus; recovery. The sac was extirpated.

LARIMORE:[63] Patient, aged 35; left oblique inguinal hernia, probably congenital; irreducible; operation; sac contained ovary and tube and vermiform appendix; the entire mass was removed and recovery followed.

LAUNAY and WIART:[64] Case 1.—Patient, aged 2 months; right congenital hernia of the ovary and tube; dissection; tube and ovary were reducible. Condition found postmortem.

Case 2.—Patient, aged 33; left inguinal hernia of the tube and ovary; observed since the seventh year; operation; the tube and ovary were reduced, the sac dissected and excised; recovery.

LE NOUENE (LEOPOLD):[65] Patient, aged 39; acquired right inguinal hernia; pain and swelling at menstrual epoch; operation; sac revealed right ovary and tube; organs were reduced and sac removed; recovery.

LENTZ:[66] Patient, aged 6 months; left congenital inguinal hernia of the ovary; irreducible; operation; the ovary with 1½ cm. of the tube, was first dissected, then extirpated; recovery.

LOCKWOOD:[67] Patient, aged 6 months; inguinal hernia found at operation to be a cystic sac containing right ovary, with fimbriæ of the tube and ligamentum latum. All these organs infiltrated with blood. They were excised and recovery ensued. The pedicle was found twisted.

LOMER:[68] Mature girl; acquired inguinal hernia of the left ovary and tube found in sac at postmortem, patient having died twenty-one days previous from atrophy and gastrointestinal catarrh.

MCCOSH:[69] Congenital hernia of the Fallopian tube and ovary; when sac was opened, the round ligament and ovary were found in it; recovery.

MACE and MONCANY:[70] Small tumor in the upper part of the right labium major, flattened, size of a small kidney bean not tender nor sensitive; did not seem to be continued into inguinal canal. Cyst of the canal of Nuck diagnosed. Mother brought child to dispensary one day when tumor mass was enlarged, reddened and painful; local symptoms increased in severity, though the general state of the infant was good. Same diagnosis, with addition of infection. Operation; removal of strangulated ovary and tube. Child recovered. Microscopic examination showed the structure of tube and ovary markedly infiltrated with blood.

MALHERBE:[71] Age 34; acquired inguinal hernia; symptoms of strangulation; herniotomy; sac contained left tube and ovary. There was tubal pregnancy. Tube and ovary removed. Recovery. The ruptured tubal pregnancy simulated strangulated hernia.

MANEGA:[24] Case 1.—Patient, aged 4 months; strangulated left inguinal hernia; operation; in the sac were found left inflamed ovary and an adherent tube. Excision. Recovery. The excised ovary weighed 2 gm.

Case 2.—Patient, aged 30; acquired inguinal hernia. Oper-

ation; sac contained small portion of epiploon, a portion of the left tube and the ovary. Being healthy, the organs were reduced and recovery took place.

MANLEY:[72] Infant, with right inguinal hernia, hereditary and congenital; irreducible; operation; sac was found to contain ovary, Fallopian tube and part of the broad ligament. Championniere's operation for radical cure was performed. Recovery.

MARIANI:[73] Patient, aged 10; acquired inguinal hernia; double; the sac was opened on the right side and found to contain the ovary and tube; the latter was separated from the sac wall and reduced. The ovary and sac were removed. Recovery.

MARTIN:[74] Patient, aged 5 years; right inguinal hernia; irreducible; operation; serous contents with discolored ovary, tube and round ligament. Extirpation; recovery. There was torsion of the pedicle in this case also.

MAY:[75] Patient, aged 7 months; left inguinal hernia of the ovary; irreducible; symptoms of strangulation; herniotomy; the mass contained ovary and fimbriated end of Fallopian tube. It was removed completely. Recovery.

MORGAN, J. H.:[76] Patient, aged 8 months; congenital inguinal hernia of the right ovary. Operation: Sac contained blood-stained fluid and right ovary. Attached to upper end of ovary was a slender pedicle, twisted on itself, which was found to be the right tube and broad ligament. The ovary, tube and broad ligament were removed as they were in congested condition. Recovery.

MUNIAGURRIA, C.:[77] Aged 3 months; right inguinal hernia; reducible; operation: Sac contained right ovary and tube in inflamed condition, necessitating excision. Recovery.

DE NAZARIS:[78] Woman, aged 40; acquired inguinal hernia following violent fit of coughing; irreducible; operation. After escape of liquid from the sac, the right ovary and tube were found in the bottom of the sac; they were totally removed. Recovery.

OWEN:[79] Patient, aged 11 months; right inguinal hernia of the ovary and tube; irreducible; herniotomy; the ovarian pedicle was found twisted inside the hernial sac; the part removed consisted of ovary, Fallopian tube and parovarium, of which the ovary comprised about two-thirds of the entire mass, and the rest one-third. Recovery.

PANAS:[80] Aged 7 months; strangulated inguinal hernia; celiotomy; right ovary and tube were found in the sac. Reduction of the organs followed by recovery. Patient died later, after leaving the hospital, from enteritis.

PARKER, RUSHTON:[81] Patient, aged 24; double inguinal hernia of ovary and Fallopian tube; absence of vagina and cervix uteri; no menstruation; herniotomy; reduction was impossible, therefore the entire sacs were removed. Hernias probably congenital.

PINKERTON:[82] Patient, aged 16 months; irreducible hernia of left Fallopian tube and ovary; mother stated that it appeared six months previously, after an attack of crying; the entire mass was removed. The walls of the tube were gelatinous and presented naked-eye appearances of tuberculous salpingitis. Recovery.

POLLARD:[83] Patient, aged 3 months; congenital hernia of the right ovary, situated over the external abdominal ring; irreducible; strangulated; laparotomy; sac contained ovary and fimbriated extremity of the Fallopian tube; sac and contents completely excised. Recovery.

PUECH:[84] Patient, aged 26; left inguinal hernia apparently congenital, containing ovary and tube; irreducible, sensitive and painful at menstrual epochs, increasing in size each time.

QUADFLIEG:[85] Patient, aged 41. In fourth month of pregnancy. For nine years an irreducible right inguinal hernia. Sac contained right ovary and tube. They were reduced and recovery followed.

REYMOND, E.:[86] Patient, aged 38; left inguinal hernia, existed since two years of age; also acquired umbilical hernia. Inguinal hernia, irreducible; operation; sac contained portion of intestine, left fibrocystic ovary and tube, and portion of bladder; return of bladder to abdominal cavity; recovery; operation for umbilical hernia; recovery.

RHEINSTAEDTER:[87] Patient, aged 68; sarcomatous ovarian tumor in right inguinal hernia excised; tube and portion of round ligament also removed from sac; intestine was likewise found in the sac. No trace of uterus found. Recovery. Hernia of the normal ovary, which appeared in the same side, was kept up by a bandage.

RIGBY:[88] Patient, aged 3 months; previous day mother noticed swelling in right groin; painful; increased in size; skin became inflamed. Irreducible. Contents had a narrow neck. Incision revealed dark fluid blood; ovary purple. Fallopian tube recognized by the fimbriæ; neck was acutely twisted; horn of uterus appeared at the ring. Ovary and tube excised. Recovery.

RIZZOLI:[89] Patient, aged 46; symptoms of strangulated inguinal hernia; irreducible; herniotomy; sac contained the tube and left ovary; on reduction an intestinal loop was found becoming gangrenous. Patient died six days after operation. Autopsy showed death due to the strangulated intestinal loop which had been reduced.

DE RUYTER:[90] Patient, aged 44; acquired inguinal hernia; irreducible; operation. Sac was found to contain right ovary, tube and round ligament. As the ovary had undergone cystic degeneration, it was removed with the tube. Recovery.

SCHMIDT, HEINRICH:[91] (Professor Dehner, operator). F. H., 25 years old; uterus absent; vagina a blind sac. Double inguinal hernia; reducible. Operation: Left side, April 20, 1895. Contents: Left ovary and tube and part of broad ligament as pedicle. Contents reduced. Ring closed with silk (Macewen). Recovery. Operation: Right side, May 7, 1895. Serous sac found empty at first, but by traction on same the right ovary and tube (exactly as in the other operation) presented themselves. Ring closed. Recovery.

SCHNITZLER:[67] Patient, aged 6 months, left inguinal hernia, irreducible; operation. Sac was opened, contained serous fluid, ovary, tube and ligamentous latum. Pedicle was twisted to an angle of 360 degrees. Whole mass was extirpated. Recovery.

STEINEL, NICOLAUS:[92] 1892, patient, aged 40; 8-para. Inguinal hernia for twenty years, increasing in size; no truss. On left side size of child's head. Operation: Replaced ovary, tube and broad ligament. Recovered.

SUTTON, BLAND:[93] Patient, aged 4 months; inguinal hernia; irreducible; operation. Serous fluid escaped, when sac was opened; at the bottom left ovary and tube were found. They were removed with the adjacent parts. Recovery. A cyst occupied the uterine pole of the ovary and the ampulla of the tube.

TAIT, LAWSON:[94] Patient, aged 26; first observed rupture when six years old; irreducible. Operation; sac was removed; it contained fluid and several cysts, the walls of which were found to be those of an ovarian tumor and the end of the Fallopian tube protruded through the ring at the base of the tumor on its under aspect and was removed along with it. Recovery.

TRICOMI:[95] Case 1.—Patient, aged 14; right congenital inguinal ovarian hernia; reducible; operation. Sac contained ovary and tube. Reduction of hernia. Excision of sac. Recovery.

Case 2.—Patient, aged 40; left inguinal hernia; partly reducible. Operation; sac contained healthy left ovary, omentum, small portion of tube adherent to sac; removal of adhesion and reduction. Recovery.

TSCHERNING:[96] Patient, aged 6 months; born six weeks before full term. Since birth a right inguinal swelling; reducible and held by a truss. Now incarcerated for two days, with pain and increased temperature. Examination showed an olive-sized body in the right labium, not reducible; also a small left reducible hernia; herniotomy; wound healed in eleven days. Later died of enteritis.

Autopsy: On the right there was no hernia, but a small canal through which the round ligament and the tube passed. On the left was a small hernia containing none of the genitalia. Microscopic examination of the mass removed at operation showed ovary, fimbriated end of tube and some broad ligament. The hernia was into the canal of Nuck.

TUBBY:[97] Infant, aged 4 months. Operation disclosed both ovaries and both tubes in a left inguinal hernia. The organs

were partly covered by the peritoneal sac and were adherent to the surrounding structures. Operation. Left tube and ovary were removed. Right tube and ovary and tube were reduced. Suppuration in the abdominal wall. Death. Autopsy showed no peritonitis. Organs normal except as stated.

Wrinch, H. C.:[98] Patient, aged 26; acquired left inguinal hernia; pain during menstrual epochs; operation; sac contained left ovary and tube, firmly adherent to the sac; both were removed. Recovery.

Zogbaum:[99] Case 1.—Patient, aged 8 days. Congenital inguinal hernia. Child died of suffocative catarrh. At autopsy the sac was opened and found to contain the left tube and ovary.

Case 2.—Patient, aged 43 days. Congenital inguinal hernia; irreducible. Patient died of pneumonia. At autopsy the sac was opened and found to contain the left ovary and orifice of tube.

Zurhelle, E.:[100] Patient, aged 44, married 21 years. Nine normal births, after last birth she had a left-sided parametric exudate. In 1903, operated on by median incision. Left cystic ovary and hematosalpinx removed and a small cyst punctured in right ovary. Right ovary and tube normal Feb. 19, 1906, operated on for right inguinal hernia of ovary and tube, of 6 months' duration. Recovery.

Analysis of cases of inguinal hernia.

Right	31	Not stated	5
Left	44		
Double	8	Total	88

In five of these cases not classed as double there was double hernia, but one side only contained genitalia. In one case both ovaries and both tubes were in the same hernia.

		Results of operations:	
Found at Autopsy	7	Recoveries	69
Not stated	1	Deaths	7
Operated on	80	Not stated	4
Total	88	Total	80

In 18 of the 80 cases operated on the ovaries and tubes were returned to the abdomen. In 2 cases the ovaries were removed and the tubes returned to the abdomen. In 2 cases the hernia recurred and the other ovary was found in the sac.

Malformation was observed in 7 cases. It was probably present in more. Herniotomy affords little opportunity for inspection of the pelvic organs.

Tubal pregnancy within the hernial sac occurred in 5 cases. In one case the uterus was pregnant in the pelvis, while the ovary and tube were in the hernial sac. There was strangulation in 11 cases, twisted pedicle in 13, cystic ovary in 6, tuberculosis of the tube in 2 and sarcomatous ovary in 1. In 8 cases intestine or omentum was mentioned in the sac and in 2 the vermiform appendix. The ages range from birth to 52 years.

CASES OF FEMORAL HERNIA CONTAINING BOTH OVARY AND TUBE.

Broca:[101] Aged 40; left crural hernia of the ovary and tube strangulated. Sac was extirpated with the ovary, but the tube, being healthy, was returned to the abdomen. Recovery.

Haller:[5] This author reports an enormous crural hernia in a woman, in whom the hernia was strangulated; the sac was opened; left ovary and a portion of the tube were found. Reduction followed and the patient made good recovery.

Hawkins, Caesar:[55] Patient, aged 65; right femoral hernia; symptoms of strangulation; bowel incarcerated; hernia was divided into two parts, one of which felt like omentum on opening sac; while Fallopian tube and broad ligament with a shriveled ovarium, with five or six inches of intestine, were found on dividing the stricture; the bowel readily went up, also the uterine appendages. Recovery.

Hufschmid:[7] A case of irreducible, crural hernia, the size of an egg. Sac contained the fimbriæ and part of right tube and ovary; operation; recovery.

Parker:[102] Patient, aged 69. Right acquired strangulated crural hernia. Sac contained ovary and Fallopian tube; radical operation; recovery.

Analysis of the Cases of Femoral Hernia.—Of these five, three were right and two left. There was incarceration and strangulation, with operation and recovery in all. The ages range from 40 to 69 years.

CASES OF OBTURATOR HERNIA CONTAINING BOTH OVARY AND TUBE.

Blazina:[103] Patient, aged 66; died of pneumonia and at autopsy an obturator hernia was discovered. The sac contained the right tube and ovary.

Lickley, J. D.:[104] Patient, 87; death from hemiplegia. Autopsy; obturator hernia was discovered; the sac contained the whole right ovary, 1 cm. of the round ligament and 4.8 cm. of the right tube.

Rogner-Gusenthal:[105] Patient, aged 66. Incarcerated obturator hernia; death fifth day after excision; at autopsy sac was found to contain right broad ligament, with tube and ovary, the uterus being drawn over to the obturator foramen; the condition had existed over 26 years; the ovary, tube and small portion of intestine were in a state of beginning gangrene, therefore could not be reduced (Fig. 2).

Schopf:[106] Patient, aged 68, acquired hernia of the left tube and ovary through the obturator canal; irreducible; herniotomy; ovary and all but 5 cm. of the tube removed. Death from collapse.

Analysis of Obturator Cases.—Right, 3; left, 1; total, 4. Found at autopsy, 2; death after operation, 2. The ages range from 66 to 87.

CASES OF ISCHIATIC HERNIA CONTAINING BOTH OVARY AND TUBE.

Chenieux:[107] This was a case of right ischiatic hernia; extirpation of ovary; ovary and tube in the sac.

Routier:[108] Patient, aged 40; acquired hernia; at operation proved to be the cystic ovary which, together with the tube, had passed through the ischiatic notch. Recovery.

REFERENCES.

1. Andrews: "Hernia of the Tube Without the Ovary," The Journal A. M. A., Nov. 25, 1905.
2. Doring: "De herniæ uterinæ atque hanc justo tempore subsequentis partis Cæsarei historia," Vitemberg, 1612.
3. Oelhafen: "De partibus abdomine contentis," Gedani, 1613.
4. Oneidas: "Diss. de hernia uteri," Lugd. Batav., 1680.
5. Haller. "Disputat. Chir. Select," 1755, vol. iii, p. 41.
6. Balin: "L'Art de Guerir les Hernies," 1768.
7. Hufschmid: Schweizerische Zeitft. f. Heilk., vol. ii, 1863, p. 48; also Arch. f. klin., Chir., vol. viii, p. 637.
8. Hulke, T. W.: Medico-Chir. Trans., 1864, vol. xlvii, p. 97.
9. Schillbach: Jenaische Zeitft. f. Med. u. Naturwisft., 1864, vol. i, p. 242.
10. Hamilton and Terry: Bellevue Hospital Reports, 1876.
11. Courty: "Traité des Maladies de l'Uterus."
12. English: Oesterr. Med. Jahrb., Vienna, 1871, p. 335.
13. Puech: "Des Ovaires et leur Anomalies."
14. Langton, G.: St. Barth. Hosp. Reports, London, 1882.
15. Lejars: Gaz. des Hôp., 1889.
16. Brunner: Beitr. z. klin. Chir., 1889, vol. iv, p. 32.
17. Hagner: "A Case of Hernia of Parturient Uterus Through the Linea Alba," The Journal A. M. A., vol. xii, p. 302.
18. Roux: Congrès Français de Chirurgie, Fifth Session, 1891.
19. Schwartz, Ed.: Id., Sixth Session, 1892.
20. Boeckel, Jules: Gaz. Méd., Strasburg, 1892.
21. Brohl: Deut. med. Wochft., 1893.
22. Rosanoff: Arch. f. klin. Chir., 1895.
23. Lejars: Rev. de Chir., January and February, 1893.
24. Manega: Riforma Medica, Naples, 1894.
25. de Vaucher: These pour le doctorat, 1854, p. 49.
26. Menclère: Rev. mens. des Mal. de l'Enfance, 1897.
27. Bernier: Centbl. f. Gyn., 1898.
28. Browne, H. Bernard: Gynecological Trans., vol. xxiii, p. 1898.
29. Martin: See his work, "Krankheiten der Eierstöke und Nebeneierstöke," for article.
30. Morf, Paul F.: "Hernia of the Fallopian Tube Without Hernia of the Ovary," 1901.
31. Belbin: Brit. Med. Jour., 1898, vol. i, p. 1398.
32. Bilhaut: Ann. de Chir. et d'orthop., Paris, 1904, vol. xvii, p. 193-197.
33. Black, Carl: Ill. Med. Jour., 1904.
34. Bloodgood: Johns Hopkins Hosp. Rep., 1898, 1899, vol. vii, p. 318.
35. Boeckel: Rev. Med. et Chir. des Mal. des Femmes, 1882, vol. iv, p. 115.
36. Lemhofer: Inaug. Dissert., Leipsic, May, 1895, vol. xvii.
37. Bristow: Trans. Med. Soc. State of New York, 1902, p. 252.

88. Broca: Bull. Soc. Anat., Jan. 27, 1893 (Case 4). Rev. mens. des Mal. de l'enfance, 1897, vol. xv, p. 275 (Cases 1, 2, 3); L. Progres Med., 1904, vol. xix, 3rd series, p. 54.
89. Bucura: Zentbl. f. Gyn, 1904, No. 46, p. 1410.
90. Bullitt: Louisville Month. Jour. Med. and Surg., August, 1904, p. 97.
91. Cahen: Münch. med. Wochschr., 1900, No. 38.
92. Charon: Jour. de clin. et de therap. infant, Paris, 1898, vol. vi, p. 21.
93. Chiarelli: Centbl. f. Gyn., 1883, p. 464.
94. Coote, Holmes: Lond. Lancet, 1864, vol. i, p. 96.
95. Damianos: Deutsch. Ztschr. f. Chir., Leipsic, vol, lxxx, Nos. 3 and 4.
96. Duplay and Wiart: Bull. Soc. Anat., June, 1897.
97. Fleischmann: "Liechenöffnungen," Erlangen, 1815.
98. Gaugele: Deut. Zeitft. f. Chir., 1904, vol. lxxiii, p. 216.
99. Genth: Verhandl. d Gesell. f. Geb., Berlin, 1855, No. 8, p. 97.
100. Schweigii, Martin: "Syllepsilogica histor. medica: Hoc est conceptionis mulebris consideration," Dresden and Leipsic, 1731
101. Guersant: Bull. Soc. Chir., Paris, 1851-1852, vol. ii, p. 127.
102. Guinard and Dudefoy: Bull. Soc. Anat., 1893.
103. Habs: Münch. med. Gesell., No. 3, 1901.
104. Halley: Kansas City Med. Rec., 1884, vol. i, p. 260.
105. Hawkins: See Barnes' Amer. Jour. Obstet., 1883, vol. xvi, p. 4.
106. Heegaard: Bibliotek. f. Läger, 1904, Nos. 5-8, p. 534 (Case 1); "Uber Ovarial hernien," Arch. f. klin. chir., 1904-1905, p. 487.
107. Schnitzler: Wien. klin. Rundschau, 1903, No. 42, p. 793.
108. Holst and Tiling: St. Petersb. med. Wochft., 1885, No. 36, p. 301.
109. Hulke: London Lancet, 1883, June 23, p. 1088.
110. Jordan: Münch. med. Wochft., 1897, vol. xliv, p. 7.
111. Kössmann: See Martin's "Krankheiten der Eierstocke und Nebeneierstöcke," 1899, vol. ii, p. 162.
112. Krieger's Handb. d. Chir., vol. iii. p. 342.
113. Larimore: Med. Rec., August 4, 1900, p. 192.
114. Launay and Wiart: Bull. Soc. Anat., Paris, 1897, Fifth series, vol. xi, p. 78.
115. Le Nouene, Leopold: Gaz. de Gyn., 1903, vol. xviii, p. 337.
116. Lentz: Gaz. Med., Strasgburg, 1881, No. 9, p. 97.
117. Lockwood: Brit. Med. Jour., 1896, June 3, p. 1442.
118. Lomer: Centbl. f. Gyn., 1884, vol. viii, p. 217.
119. McCosh: Trans. Amer. Surg. Assoc., 1895, vol. xiii, p. 481.
120. Mace and Moncany: Annales de Med. et Chir. Infant, Paris, 1905, vol. ix, pp. 501-503.
121. Malherbe: Münch. med. Wochft., 1897, vol. i, No. 44, p. 9.
122. Manley: Ann. Gyn. and Pediatry, 1893, vol. vi, p. 606.
123. Mariani: Il policlinico sez. präk. fasc., vol. vii, No. 17, 1901.
124. Martin: Rev. Med. de la Suisse Romande, Dec. 20, 1903.
125. May, Brit. Med. Jour., 1898, vol. i, p. 1389.
126. Morgan, J. H.: Lond. Lancet, 1897, vol. i, p. 1340.
127. Munfagurria, C.: Semana Med., 1902, p. 396.
128. de Nazaris: Rev. Med. Chir. des Mal. des Femmes, 1895, vol. xvii, p. 541.
129. Owen: Lond. Lancet, 1896, vol. i, 765.
130. Panas: Gaz. de Hop., 1868, p. 135.
131. Parker, Rushton: Brit. Med. Jour., 1893, vol. i, p. 68.
132. Pinkerton: Brit. Med. Jour., 1899, vol. ii, p. 853.
133. Pollard: Lond. Lancet 1889, vol. ii, p. 165.
134. Puech: Ann de Gyn., 1879, vol. i, pp. 415, 421; also Ann. de Gyn., 1878, vol. ii, p. 336.
135. Quadflieg: Münch. med. Wochft., 1901, No. 20, p. 790.
136. Reymond, E.: Bull. Soc. Anat., Paris, 1894, Nov., Dec., p. 842.
137. Rheinstaedter: Centbl. f. Gyn., 1878, vol. ii, p. 545.
138. Rigby: Lancet, 1905, August 5, p. 360.
139. Rizzoli: Mem. Chir. et Obstet., Paris, 1872.
140. De Ruyter: See Moser's "Zur Kenntnis der Ovarial-hernien," Inaug. Diss., 1898, p. 17.
141. Schmidt, Heinrich: Inaug. Diss., Wurzburg, 1896.
142. Steinel, Nicolaus: "Ueber Ovarial Hern.," Inaug. Thesis, Münch, 1896.
143. Sutton, Bland: Med. Press and Circular, 1896, Dec. 2, 582.
144. Tait, Lawson: Brit. Gyn. Jour., 1885-1886, vol. 1, p. 328.
145. Tricomi: Riforma Med., 1894, Nos. 42, 43, p. 507.
146. Tschorning: Med. Selskabs Forhandlinger Hospitalstid, 1898.
147. Tubby: Brit. Med. Jour., Oct. 9, 1897, p. 968.
148. Wrinch, H. C.: Canada Lancet, 1899-1900, vols. xxxii, and xxxiii, p. 665.
149. Zogbaum: Inaug. Diss., Jena, 1844, p. 20.
150. Zurhelle: "Zur Kasuistik der Hernia Ovarica Inguinalis," Zbltt. f. Gyn., Bonn, May 12, 1906, vol. xxx, No. 19, p. 541.
151. Broca: Bull. Soc. Anat., Jan. 17, 1893.
152. Parker: N. Y. Med. Times, January, 1855, p. 109.
153. Blazina: Prag. Viertljahrssch. f. Prakt. Hlk. 1848, vol. i,p. 126.
154. Lickley, J. D.: Glasgow Med. Jour., 1892, March.
155. Rogner-Gusenthal: Wien. Med. Presse, 1893, No. 26, p. 1010, Illustration.
156. Schopf: Wien. klin. Wochft., 1903, No. 8, p. 207.
157. Chenieux: Bull. de Chir., May 21, 1895.
158. Routier: Le Mercredi Med., 1890, vol. i, p. 248.

DISCUSSION.

DR. J. H. CARSTENS, Detroit, declared that this is a very rare condition. He recently saw one case. A girl 16 years old had a swelling in the left side which she had had for a long time, but it grew larger and was painful during her menstrual periods. Dr. Carstens examined it and believed it to be a hydrocele of the cord. It was soft and fluctuating, so he said that the best thing was to remove it. When he opened it a very little fluid came out, and with it the tube and ovary, and the sac extended into the internal canal. The uterus was well pulled up and the other side was all right. He closed the sac in the usual way and the patient made a good recovery.

A PATHOLOGIC STUDY OF SEVEN CASES OF PARALYSIS WITHOUT GROSS ANATOMIC CHANGE.

JOHN H. W. RHEIN, M.D.

(*Continued from page 1706.*)

Notwithstanding all these studies the cause of uremic hemiplegia has not been satisfactorily explained. One is forced to the conclusion that it may be due not to any one cause in all cases, but to one of a number of causes; in some cases, perhaps, to autointoxication; in others to edema or arteriosclerosis; and in still others to the presence of microscopic areas of necrosis which have been described in this paper.

Some confusion seems to exist as to what really constitutes uremic hemiplegia. It is a mistake to diagnose all cases of one-sided paralysis occurring in a subject who suffers from chronic kidney disease, uremic paralysis. Strictly speaking, a diagnosis of uremic paralysis should be restricted to those cases which develop during uremia, transient palsy, or a palsy which may persist to the end in fatal cases. There is no way, however, that I know of, by which it can be foretold whether the paralysis is of syphilitic origin, or is due to arteriosclerosis, autointoxication, or to cerebral edema.

In making a diagnosis of uremic paralysis we must search for the signs of intoxication of renal origin, such as general edema, pulmonary edema; premonitory symptoms, such as vertigo and gastric disturbances; the presence of albumin and casts in the urine, and other well-known symptoms of uremia. The diagnosis in old people is more difficult on account of the resemblance to symptoms following hemorrhage and softening of the brain, affections which are common in the aged. The variability and transitory character of the paralysis should always make one think of uremia as its cause.

CASE REPORTS.

In none of the following cases was any gross lesion of the brain or cord demonstrable at the autopsy.

CASE 1.—W. N., aged 68, a minstrel by occupation, was admitted to the hospital, in the service of Dr. Charles K. Mills, September, 1905. Except for the fact that his father died as a result of an attack of apoplexy, the family and previous histories were entirely negative. He dated his condition on admission, from an accident which occurred two years before, though it is doubtful that this had much bearing on his condition when admitted. While trying to board a car he was knocked down, striking his right hip on the car step. He was unable to get up or to walk, and his urine was passed involuntarily.

Examination.—On examination, after his admission, it was found that both grips were weak, the left decidedly so. The gait was tottering, although he was able to move both legs well. The tongue was protruded in the median line. There was no paralysis of the external ocular muscles, and apparently no paralysis of the cranial nerves. The pupils were moderately dilated, and his mentality seemed good. The station was fairly good with the eyes closed. Both knee-jerks were quick and slightly spastic. On stroking the plantar surface of the feet

the toes were flexed. The radial and temporal vessels were distinctly atheromatous. Examination of the abdominal and thoracic viscera was practically negative. The specific gravity of the urine was 1,002 to 1,016; there was a trace of albumin, hyalin casts, leucocytes and epithelial cells. The patient died Dec. 9, 1905.

Autopsy.—Hypertrophy of the left ventricle was found, with general arteriosclerosis and interstitial nephritis. There was no gross lesion in the brain and cord.

Sections from the paracentral regions and the medulla oblongata were stained by hemalum, Weigert hematoxylin and thionin stains. The pia was moderately infiltrated with round cells. The blood vessels were distinctly thickened in the left paracentral region. This change was slightly more marked in the right paracentral region. No change could be demonstrated in the nerve cells when stained with thionin. There was a slight old degeneration of the pyramid on the right side of the medulla oblongata.

This case was not studied further as it was probably one of cerebral syphilis, and showed an old degeneration of the pyramidal tract.

CASE 2.—W. L., aged 61, was admitted to the hospital in the service of Dr. Mills, Nov. 27, 1905. There was nothing worthy of mention in the family or previous histories.

Examination.—Patient was a somewhat emaciated old woman who was very dull of intellect and talked incoherently. She did not understand what was said to her, although she could recognize persons. The left arm was spastic and contractures were beginning to make their appearance. The grip of the left hand was very weak. The left lower extremity was held rigidly in an extended position, and there was some atrophy present. Contractures were beginning to make their appearance here also, and the foot was held rigidly. There was a marked contraction of the Achilles tendon, with a dorsal flexion of the great toe. Power and motion in the right arm were good, but there was apparently some weakness in the right leg. The face was slightly drawn to the right, and the nasolabial fold on the right was more distinct than on the left. The tongue was protruded slightly to the right, although this may have been due to the absence of teeth on that side. Stroking the plantar surface of the foot was followed by marked plantar flexion on the right and dorsal flexion on the left. The knee-jerk on the right was increased, and also on the left side, although not to the same degree. The Achilles jerk was absent on both sides. There was no ankle clonus on either side. Examination of the urine showed a specific gravity of 1,016, a trace of albumin, and microscopically numerous leucocytes and epithelial cells, but no casts. Patient died Dec. 18, 1905.

Autopsy.—Autopsy was performed the next day. The pathologic diagnosis was croupous pneumonia of both lobes, emphysema, mitral stenosis and parenchymatous nephritis.

Microscopic Findings.—Sections from the right and left paracentral regions, and from the peduncles were studied microscopically, by the Marchi and Weigert hematoxylin methods, and stained by eosin, hemalum and thionin. The pia in the left paracentral region showed a moderate amount of round cell infiltration. In the cortex of the left paracentral region two small areas were observed, evidently beginning softening. These areas were very small, but were undoubted areas of softening, as the compound granular cells were distinctly observed in places. None of these areas was observed in the right paracentral cortex, but here a moderate degree of perivascular distension was present. In the right foot of the peduncle, near the inner portion, or corresponding to the second fourth from within outward there was an acute degeneration by the Marchi method. Cells stained by Nissl's method did not appear to be abnormal. This was probably a case of syphilitic disease. The significance of these small areas of softening already referred to should not be underestimated.

CASE 3.—H. G., aged 49, was admitted to the hospital in the service of Dr. William G. Spiller, April 15, 1905. The only facts in the family and previous histories which need be mentioned are the fact that her mother died of a "stroke" at the age of 71, and that the patient had two stillborn children and one miscarriage. A year previous to her admission to the hospital she was seized with a dizziness which made her stagger "like a drunken person," but at no time to fall. She had also had some occipital headache. Five months after admission she was forced to take to her bed, where she has been ever since, and during which time she suffered from incontinence of urine.

Examination.—When admitted to the hospital she was obese, and fairly well developed. The tongue was protruded promptly in the median line and was slightly tremulous. Although both arms were moved fairly well, there was distinct loss of power on both sides, more apparent on the left. No note was made of the power in the legs. The right pupil was larger than the left, and both were moderately dilated. Both biceps tendon reflexes in the arms were increased. Knee-jerks were increased on both sides. There was no clonus, and stroking the plantar surface was followed by flexion of the toes. No loss of sensation could be demonstrated. Speech was somewhat thick, but the mentality was good. The abdomen was extremely prominent from two inches below the epigastrium to three inches above the pubes, not extending to the flanks. This mass was tympanitic, painful to pressure, and could not be reduced. Examination of the lungs was perfectly negative. There was no abnormality of the heart, except that the second aortic sound was accentuated. The urine showed a specific gravity of 1.033, a trace of albumin, epithelial cells and hyalin casts. The pathologic diagnosis was congestion of the kidneys and lungs. The patient died 14 days after admission.

Microscopic Findings.—Sections from the right and left paracentral regions, the medulla and the cervical cord were studied by the Marchi and Weigert hematoxylin methods, and stained by hemalum, eosin and thionin. Round cell infiltration of the pia and left paracentral region was found, and very slight thickening of the blood vessels, which was more marked on the right side. There was some perivascular distension in the cortex on both sides. In the left paracentral region there was a good deal of perivascular distension, but no evidence of any acute or old degeneration of the pyramidal tracts. By the Nissl stain there was no demonstrable disease in the nerve cells. No disease of the motor tracts was demonstrable by the Weigert or Marchi methods.

The lesions in this case were probably syphilitic. The perivascular distension in this case is worthy of note, as there can be no doubt that this condition, when widespread, causes some functional changes in the cortical nerve cells.

CASE 4.—A. B., aged 71, a laborer, was admitted to the hospital in the service of Dr. Mills, Dec. 11, 1905. His was probably a case of bilateral hemiparesis. No previous history was obtainable.

Examination.—There was loss of power in both arms, greater in the right than in the left. Both legs were weak. The arms and legs were markedly emaciated. There was a paralysis of the right side of the face, and he was unable to speak clearly. The pupils reacted to light and in accommodation, but vision was either entirely gone or greatly diminished. There was apparently no involvement of the motion of the eyeball. He could close both eyelids easily, the left better than the right. There was some weakness of the frontal portion of the occipitofrontalis muscle. The tongue was protruded toward the left and was tremulous. The pectoral muscles were wasted and were the seat of a fibrillary tremor. All the reflexes were exaggerated. Dorsal flexion of the toes of both feet followed stroking the plantar surface. The heart-beat was intermittent; the second aortic sound was scarcely audible. Moist, harsh rales were heard throughout the lungs but no other signs of disease were demonstrated. The specific gravity of the urine was 1,023; albumin was present and also hyalin casts, leucocytes, and a few epithelial cells. The patient died 9 days after admission.

Autopsy.—This was performed the following day. The pathologic diagnosis was croupous pneumonia, ulcerative endocarditis, primary cancer of the pancreas with secondary involvement of the liver, the right kidney and the mesentery; parenchymatous nephritis with interstitial change.

Microscopic Findings.—Sections from the right and left paracentral regions, the optic chiasm, the medulla, and the spinal cord from the cervical region, were studied by the Marchi method, and the Weigert hematoxylin method, and

stained by hemalum, eosin and thionin. The pia in the right paracentral region was infiltrated with round cells. There was also slight infiltration of the pia surrounding the medulla. In the right paracentral region small areas of softening were seen. The blood vessels were numerous, and a few compound granular cells were observed. There was a moderate amount of pervivascular dilatation in the left paracentral region. No areas of descending degeneration were made out. The paracentral cortex, stained by thionin, did not reveal any cellular change worthy of mention.

This was a case of syphilitic disease of the nervous system, and exhibited in one section a small area of softening, together with the usual round-cell infiltration of the pia of syphilis.

CASE 5.—L. R., a woman, aged 53, was admitted to the hospital, service of Dr. Spiller, June 6, 1904.

Examination.—Patient was brought to the hospital in a half-conscious condition, and when examined was muttering incoherently, responding slowly and indistinctly when addressed. She was apparently fairly well nourished, but showed signs of emaciation. She was unable to move the left leg in the slightest degree. The notes do not say whether there was any paralysis of the arms, but mention the fact that both arms were greatly emaciated, and both thenar and hypothenar eminences were flabby. The right foot was inverted to an extreme degree. The mouth was drawn to the right, but the nasolabial folds were of equal prominence, and she could wrinkle her forehead evenly on both sides. The tongue was pushed somewhat to the right, although she could not protrude it far beyond the lips. Both pupils were contracted and equal, but reacted to light in accommodation and convergence. Both eyeballs had good range of motion. There were no intraocular palsies. The reflexes were performed quickly and equally on both sides. The heart's action was regular; no adventitious sounds were heard, except that expiration was slightly prolonged at the left apex. The aortic and pulmonic second sounds were distinctly accentuated. There was incontinence of urine and feces. The lungs showed no abnormality. Specific gravity of the urine was 1,017; it contained hyalin and granular casts, besides epithelial cells, urates, and a trace of albumin. Patient died 12 days after admission.

Autopsy.—An anatomic diagnosis of bronchopneumonia of the left lung, general arteriosclerosis, and chronic interstitial nephritis was made.

Microscopic Findings.—Sections from the right and left paracentral regions, the pons, the cervical and lumbar cord, and the optic nerves and chiasm were studied by the Marchi method, the Weigert hematoxylin method, and stained by hemalum, eosin and thionin. In the pia of the left paracentral region there was a round cell infiltration. The blood vessels of the pia were markedly thickened. This was true also of the right paracentral region, where the change was slightly more marked. A moderate amount of perivascular distension was observed in the right paracentral cortex. The pia surrounding the medulla and spinal cord showed the same change as that seen in the cortical region, although it was not so intense. In a few Betz cells in the right paracentral region the nuclei were slightly eccentric without any other observable change. The Betz cells in the left paracentral region seemed to be intact. The cells from the lumbar and cervical enlargements appeared to be normal. There was no degeneration of the motor tracts in the medulla and spinal cord.

This was also a case of cerebrospinal syphilis, showing cellular infiltration of the pia, distension of the perivascular spaces of the cortex, and marked vascular changes, constituting lesions which satisfactorily explain the palsy present.

CASE 6.—M. C., aged 66, was admitted to the hospital, service of Dr. Spiller, April 10, 1904. The family and previous histories were largely negative, excepting for the fact that an uncle had died of "fits," and that the patient had been a steady, although not excessive, drinker of alcohol.

She presented a history of fits when she was 2 or 3 years of age, which continued up to the time of her admission, recently at intervals of one to three months.

Examination.—There was no loss of power in the legs. The right pupil was larger than the left; the tongue was protruded straight. There was no facial atrophy. The station and gait were good. The grips were normal. The biceps, triceps, and knee-jerks were increased on both sides. There was no clonus, and no Babinski.

No further notes were made in this case until June 18, when the patient was found unconscious with all the limbs spastic, although forced movements were possible. The biceps, triceps, wrist, patellar and Achilles jerks were prompt and equal, and the plantar reflex was normal. There was distinct ulnar deviation of the left hand, the last phalanges being extended, the others flexed. The appearance resembled rheumatoid arthritis, and was present on both sides in the hands, and to a less extent in the feet. Patient lay with the thighs flexed on the abdomen, and the legs flexed on the thighs. The left pupil responded slightly to light. There had been incontinence of urine since the previous day. Until one week before the patient had been an attendant in the out-wards of Blockley, when she had what was called a "spell." She had been bedfast since this, in a semi-stuporous state. Examination of the urine revealed a trace of albumin, hyalin casts, leucocytes and epithelium. The specific gravity was 1,005. This condition suggested some irritation of the motor tracts, and was probably uremic.

Autopsy.—The pathologic diagnosis was chronic interstitial nephritis; hypertrophy of the heart; endocardial hemorrhage; arteriosclerosis; and chronic pleurisy.

Microscopic Findings.—Sections from the right and left paracentral regions, the medulla, and the cervical and lumbar sections of the spinal cord were studied microscopically. These sections were stained by thionin, hemalum and eosin, and by the Weigert hematoxylin and Marchi methods. The pia of the right paracentral region was slightly thickened, and moderately infiltrated with round cells. There were found also in the pia numerous red blood cells. In the left paracentral region the pia showed the same change, but it was slightly more thickened and contained a few more round cells.

In the cortex of the left paracentral region a marked distension of the perivascular spaces of the small capillaries could be seen. This was also true on the right side, but to a less extent. The cells of Betz did not show any signs of degeneration, as shown by the thionin stain. No evidence of acute or chronic degeneration of the pyramidal tracts, either in the medulla or the spinal cord, could be demonstrated either by the Marchi method or the Weigert hematoxylin stain.

The only pathologic change of significance in this case, therefore, was the presence of thickened blood vessels and a marked perivascular distension, especially in the left paracentral region. A moderate round-cell infiltration of the pia suggested the possibility that this also was a case of specific disease.

CASE 7.—E. M., aged 65, a laborer by occupation, was admitted to the nervous wards of the Philadelphia General Hospital, service of Dr. Mills, Nov. 21, 1905. His mental condition precluded obtaining any previous history.

Examination.—On admission he was delirious, talking incoherently most of the time, although he occasionally appeared to comprehend when spoken to. The breath had a uremic odor. He was somewhat emaciated and very anemic. There appeared to be a slight loss of power in the left arm, which was also somewhat spastic. The left pupil was dilated and did not react to light, in accommodation or convergence. The notes state that he could not see out of the left eye. The right pupil was moderately dilated and reacted to light, in accommodation and convergence. The associated movements of the eyeballs were normal, excepting for a slight weakness of the external rotation of the left eye. Examination of the chest and abdomen was negative. There was a faint murmur at the aortic cartilage, systolic in time, and the second aortic sound was accentuated. Urinary analysis: Specific gravity, 1,020; albumin present; hyalin casts present; leucocytes and red blood cells. Clinical diagnosis was chronic interstitial nephritis, uremia, and endocarditis. Patient died 24 hours after admission.

Autopsy.—Hemopericardium, chronic interstitial nephritis, and beginning cirrhosis of the liver were diagnosed.

Microscopic Findings.—Sections from the paracentral regions, the cerebral peduncles, the optic chiasm, and the cervical regions were preserved and studied by the Marchi and Weigert hematoxylin methods, and stained by eosin, hemalum and thionin. In the right and left paracentral regions a moderate round cell infiltration of the pia was seen. This was also present in the pia around the medulla and pons. The blood vessels of the pia were markedly thickened, and in some places almost obliterated. The pia and blood vessels of the spinal cord showed a similar change. By the hematoxylin method degeneration was found in the right pyramid in the medulla, confined to the outer half. This degeneration was found also in the cervical region on the left side, and was diffuse and situated in the direct pyramidal tract on the left, and the crossed pyramidal tract on the right. There was no acute degeneration observable by the Marchi method. A small area of softening was found in the right lenticular nucleus, but otherwise the specimens showed practically no other abnormality.

This was a case of old lesion of the motor tracts, probably secondary to a necrotic process, of which one was found in one of the lenticular nuclei. Antemortem diagnosis of these lesions was impossible, and this case, a man of 65, illustrates how impossible it is to determine, without an autopsy, whether the paralysis occurring during a uremic state is due to syphilitic foci and softening, common in the old, or to some other cause the nature of which is at present speculative.

In the absence of previous history in this case it can not be stated whether there was any marked palsy apparent before the onset of the condition which was present on his admission to the hospital. Nor is there any way of determining whether this was a case in which an old lesion was awakened by the uremic state. The notes state that there was a slight weakness of the left arm, which was also spastic, and the probability is that this was a symptom that antedated the onset of the uremia. The diagnosis of uremic paralysis was entirely justifiable in this case, and only by a histologic study of the specimens could a correct diagnosis be made.

CONCLUSIONS.

I believe that the small areas of softening which I have described in this paper and elsewhere, are often the cause of hemiplegias or double hemiplegias, which have not been associated with any gross anatomic change. I wish also to emphasize the importance of careful and extensive histologic studies of the brain and spinal cord, which should be made before it is possible to exclude or determine the presence of demonstrable lesions in these cases.

Another cause for these paralyses which should not be overlooked is syphilis. I believe also that the perivascular distension, which is extensive in some of these cases, plays some part in the causation of the paralysis, probably by causing pressure on the cells of the cortex, a pressure which could come and go according to the amount of leakage from or absorption of the fluid into the perivascular spaces. This may be taken as a possible explanation of some of the cases of transient palsies with which every one is familiar as occurring in uremia and arteriosclerosis. I take this opportunity to express my sincere thanks to Dr. Charles K. Mills and Dr. William G. Spiller for the privilege of studying and reporting these cases.

DISCUSSION.

DR. D. J. MCCARTHY, Philadelphia, said he is fully in accord with Dr. Rhein's findings in these cases of uremic hemiplegia. The confirmation of a diagnosis of uremic hemiplegia after death is as difficult as the clinical diagnosis, and anyone who has attempted to differentiate a case of uremia will recognize how extremely difficult this differentiation is. One is not justified at autopsy after making sections of the brain, in the absence of gross lesions, in diagnosing the case as one of uremia. The case should be studied with the greatest care, and even with an experienced eye the gross examination will frequently fail to reveal pathologic conditions which will appear under the microscope. In order to determine this matter sections should be made from the cortex, the internal capsule, the pons, the medulla and especially the spinal cord. As to the pathologic lesions described in Dr. Rhein's paper, some of the cases were undoubtedly cases of cerebrospinal syphilis, but Dr. McCarthy does not think the lesions described in one or two of the cases sufficient to justify such a diagnosis. In reference to the clinical diagnosis of uremic hemiplegia, Dr. McCarthy said that there are cases in which the differentiation from an organic hemiplegia due to hemorrhage or thrombosis is impossible. This is especially true of a group of patients admitted into the hospitals in an unconscious condition, and in which it is impossble to obtain a history of the patient. In these cases the Babinski reflex not infrequently is noted, or rather in cases of uremic hemiplegia the Babinski reflex is not infrequently present. A valuable means of differentiation is to place a careful watch on the patient, and in the uremic group the temporary disappearance of the paralysis is often noted. The difficulty of differentiating the uremic from the organic hemiplegia was well illustrated in one case recently under Dr. McCarthy's observation, in which a patient with croupous pneumonia complicated by an acute parenchymatous nephritis, suddenly became unconscious with convulsions localized to the paralyzed side, conjugate deviation, right hemiplegia, Babinski reflex, etc., and died within six hours after the onset of the nervous symptoms. At the autopsy the brain appeared to be normal to gross examination and after gross sectioning. A very careful examination later showed thrombosis in the Sylvian fissure with a recent lesion posterior and beyond the motor region. In this case the organic condition was accentuated and the symptoms complicated by the uremic intoxication.

The diagnosis of cerebral disease complicated by disease of the kidneys is influenced by the intoxication from the kidney in the production of the by-symptoms, which should always be considered. This is of especial importance in a large group of cases in which there is extensive general arteriosclerosis, cerebral arteriosclerosis and contracted insufficient kidney. When hemiplegia with unconsciousness develops in this group of cases it may be purely uremic when there is evidence of marked insufficiency of the kidney as determined by the urine examination (total quality, specific gravity, total urea, albumin casts, etc.), the pulse, cardiac and respiratory action, etc. It may, however, be caused by cerebral hemorrhage due to the increase of general blood pressure of nephritis acting on the weakened sclerosed vessels. In other discussions Dr. McCarthy has spoken of an extensive number of cases of hemiplegia presenting no gross cerebral lesions other than extensive cerebral arteriosclerosis with localized partial obstruction of vessels supplying the motor area. In this group of cases while there may be associated kidney disease, there is no evidence in the clinical examination of insufficiency of the kidney. The clinical picture of the case does not differ from the hemiplegia with unconsciousness due to uremia, or cerebral hemorrhage or thrombosis. When death occurs, which not infrequently happens, no gross lesion of the brain is found, but on careful study of the vascular system the blood vessels supplying the motor area on the affected side will be found to be the seat of an extensive endo-arterial obstruction which must necessarily cut down the blood supply to at least one-fourth to one-fifth of the normal blood supply of the affected area. When there is a general lowering of the blood pressure, this reduced blood supply becomes too little to supply the cerebral tissues which demand for proper functioning a free and full blood supply. The same condition obtains in the peripheral nerves due to the same cause in the condition which has been described as intermittent claudication affecting most fre-

quently the lower extremities, but at times also the upper extremities. In this condition there is an intermittent loss of power due to the deficient blood supply to the peripheral nerves. This group of cases, to which Dr. McCarthy has given the name of cortical exhaustion paralysis, should be entirely differentiated from another and much larger group of cases as a result of cerebral arteriosclerosis. In this latter group of cases a temporary loss of power on one side of the body occurs without loss of consciousness, and lasts, as a rule, only a short time. This is due to the small, even microscopic area of softening in the motor paths to which Dr. Rhein called attention in his paper. The clinical feature in this group of cases is so entirely different to that due to cortical anemia that there is no difficulty in separating them clinically, and no excuse for confusing them either clinically or pathologically. In this group of cases the diagnosis is made when there is a normal kidney function with the symptoms as above described. When there is kidney disease the degree of insufficiency of the kidney must be carefully determined before making the diagnosis. In patients with cortical exhaustion paralysis who recover, there may at first be no evidence of preceding paralysis, but after a period of motor activity (depending on the degree of vascular obstruction) from one to four to six weeks, there is a return of the paralytic phenomena. This return is independent again of any kidney disturbance.

DR. MORTON PRINCE, Boston, mentioned a case which very closely resembled one which Mr. McCarthy spoke of, and which in one respect is unique. It was a case of uremic hemiplegia, in which the hemiplegia shifted from one side of the body to the other and back again in the course of a few hours, thus alternating for a time from one side to the other. At the autopsy, which, it should be said, was not made by a pathologist, there were no gross lesions found or changes which would account for the alternating paralysis.

DR. HERMAN H. HOPPE, Cincinnati, said that in considering these cases of uremic paralysis a sharp distinction should be made between that class of cases, purely transitory in character in which the lesion disappears very frequently with the disappearance of the uremic attack, and those in which the lesion afterward becomes permanent. At the Denver session of the American Medical Association he read a paper on a group of clinical cases, one of which was a case of motor aphasia. The patient recovered and lived a great many years afterward. Dr. Hoppe's personal opinion is that these cases are due to cortical weakness plus autointoxication. Very frequently in these cases, as Dr. McCarthy said, the cortical weakness progresses and leaves a permanent lesion. Two of the patients whose cases Dr. Hoppe reported at the Denver meeting remained well for several years and then developed into hemiplegics. They were private patients and he was not able to obtain any autopsy. The opinion which Dr. McCarthy expressed is probably true, viz., that there is often a condition of arteriosclerosis, diminishing the blood supply of the cortex. This leads to a passing hemiplegia or monoplegia, and then, in the course of years, when the arteriosclerosis becomes worse, probably a thrombosis, probably a hemorrhage develops; then what was formerly a transitory condition is changed into a permanent condition.

DR. W. G. SPILLER, Philadelphia, said that the condition of transitory paralysis, occurring in arteriosclerosis, has been recognized many years. There is one aspect of the subject Dr. Rhein brought forward in his paper, which Dr. Spiller mentioned at the recent meeting of the American Neurological Association—that is, the existence of minute areas of softening. Marie and some of his assistants have reported the finding of minute cavities in the brain, which are likely to be overlooked. They are about the size of a pea, sometimes smaller and sometimes larger; often they are not regarded as important, and yet occurring in the motor tracts they produce paralysis. The areas of softening which Dr. Rhein speaks of are different. Microscopically they are difficult to detect, and they are often invisible to the naked eye. When one minute area of softening of this kind is found it is certain there are many more; and when they are numerous in the brain they must produce symptoms of a diffuse character.

DR. T. H. WEISENBURG, Philadelphia, said that three years ago he reported in the *Journal of Nervous and Mental Disease* two cases of uremic hemiplegia with necropsy. In one the patient had persisting hemiplegia which lasted 14 days. In an examination of the motor cortex Dr. Weisenburg found the nerve cells intensely diseased, but especially so on the side opposite the paralysis. In association with this nerve cell degeneration there was primary degeneration of the motor tracts which he traced from the internal capsule to the sacral cord. A careful search, in which he was assisted by Dr. Spiller, failed to reveal any small areas of softening such as Dr. Rhein describes, to account for the degeneration. Dr. Weisenburg has no reason to change the opinion then expressed that any poison or toxin like that found in a uremic condition, if persisting long enough, may cause sufficient change in the nerve cells to give secondary degeneration of the motor tracts associated with it. In none of the cases Dr. Rhein reports did the paralysis last long enough to cause changes similar to those described by Dr. Weisenburg. Dr. Rhein's results are interesting and show the changes to be expected in arteriosclerotic conditions. Regarding the differential diagnosis clinically between the hemiplegia found in uremia and in arteriosclerosis, he is convinced that in the majority of cases it can be made. He has done this repeatedly in the wards of the Philadelphia Hospital to the satisfaction of others. He does not believe, however, that it is possible in most cases to make a differential diagnosis from the hemiplegia resulting from a hemorrhage.

DR. JOHN H. W. RHEIN, Philadelphia, emphasized the point brought forward by Dr. McCarthy as to the necessity of making careful and exhaustive microscopic studies of the brain and spinal cord in those cases of hemiplegia in which there is no demonstrable lesion at the autopsy. He also called attention to the fact that syphilis plays an important part, in his opinion, in the production of the so-called uremic hemiplegias. At Blockley, in Philadelphia, in a large proportion of the cases seen in the nervous wards there is a history of syphilis, and many of these patients die during a uremic attack. In such cases Dr. Rhein believes it is impossible to tell whether the hemiplegia is of uremic or specific origin.

AFFECTIONS OF THE SPINAL CORD IN EPILEPTICS.*

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In consideration of the immense amount of literature on the subject of epilepsy it is somewhat surprising that practically nothing has been written in regard to the condition of the spinal cord in this disease and that there are practically no observations on this subject. This may be accounted for in part by the fact that the source of the striking motor and mental symptoms has almost from the first been recognized as due to the brain, or at least of intracranial origin, and in part also because so long as no anatomic or pathologic change in the cerebrum or medulla could be demonstrated, it seemed useless to examine a portion of the body less affected and where the lesions, if such existed, were likely to be even more obscure. A third cause is that in this country, at least, it is only of late years that the spinal cords have been properly removed and examined after death and that even now but comparatively few observers are able to examine spinal cords thoroughly.

It has been my good fortune through the kindness of Dr. Flood, superintendent of the Massachusetts Hospital for Epileptics, to have at my disposal for examin-

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ation a considerable number of epileptics—over 500—and to be able to see what clinical evidence was offered in relation to any abnormal condition of the spinal system. A small number of cases presented definite evidence of disease of the spinal cord.

CLASS I.

We may divide these cases into the following classes: First, those in which a definite affection or lesion of the spinal cord occurred in an epileptic, apparently merely as a coincidence. There is no reason why a person subject to epilepsy should not at the same time be affected by a disease or disturbance of the spinal cord in the same way and manner as a healthy person might be. This undoubtedly occurs in a certain number of persons. In such cases the epilepsy and the spinal cord disease have distinct and separate origins and causes and there is no etiologic relationship in their occurrence in the same individual.

CLASS II.

The second class of cases is by far the most common; that in which the same cause or lesion produces both the epilepsy and the spinal cord lesion. This class has two subdivisions: *a*, That condition in which the same cause produces separately the epilepsy and the spinal cord affection, as when as a result of syphilis, both epilepsy and tabes are produced, but each lesion, though due to the same cause, is independent of the other. *b*, Those cases in which the affection of the spinal cord is secondary to some lesion in the brain, which lesion may be regarded as the source of the epilepsy. In other words, in these the same cerebral lesion produces both the symptom-complex epilepsy and the secondary degeneration of the spinal cord. This is by far the most common type. It is not at all infrequent to find not only hemiplegia connected with epilepsy, in which we should certainly expect to find well-marked secondary systemic cord lesion, but we also occasionally find other forms of spinal affection, possibly secondary to cerebral lesion.

The following case is interesting as an example of such conditions:

CASE 1.—A. K., female, married, born in Ireland, was admitted to the State Hospital for Epileptics, May 6, 1905. Family history negative. The commitment paper was as follows: Very absent-minded. Difficulty in concentrating mind. Aphasia. Has two or three attacks (epileptic) a month in which she falls. Right limbs twitch at irregular intervals and afterwards are numb and tingle; the corners of the mouth are drawn up and twitch.

History.—She had been a bright girl, a fair scholar, and was married eleven years ago. Convulsions began one and one-half years ago and are limited almost wholly to the right limbs; consciousness is lost for a short time. The right limbs may shake for an hour or two after the convulsion. Difficulty in speech began about the same time as the convulsions (one and one-half years ago). She was a good writer but now writes poorly. Has had right hemiplegia at times recently (possibly exhaustion paralysis). Menstruation has been absent sixteen months. She is apathetic. Emotions are uncontrolled. Wets and soils clothes.

Physical Examination.—Right pupil is dilated; does not respond to light or accommodation. Vision is fair. Speech is scanning, slow. There is tremor and incoördination of tongue and incoördination of limbs. Sensation to touch and pain are normal. There is no astereognosis. She complains that right limbs are weaker than left and are numb and that she has a crawling sensation on the right.

October 1: Patient is more dull and stupid. Incoördination of limbs is more marked. Tremor of right limbs is intentional but not fully characteristic. Right lower extremity has become spastic. Knee jerks have increased. Triceps reflexes have increased. Right pupil is dilated, some lateral nystagmus. Fundi are normal. There are motor aphasia and paraphasia. Patient understands, but uses the wrong words and can not recall the words she wants. At other times talks moderately well. Can not write legibly. Can read and understand print and writing. Has had partial exhaustion paralysis of right limbs lasting several days and following the only severe attack since here. Urine is negative.

Examination made by me in January, 1906, was essentially the same. The head showed nothing abnormal: There was no tenderness and no scars. The right pupil was much dilated and the left pupil small; both reacted to light and accommodation. The external ocular muscles were normal. No nystagmus was seen. Face was symmetrical; no paralysis. The tongue was protruded straight and showed gross antero-posterior movements and some tremor. Submaxillary glands were enlarged; no other enlarged glands detected. Upper extremities were normal in appearance; there was no atrophy and no tenderness. Triceps reflexes normal (right not increased). Grasps fair; right less strong than left. No incoördination. No astereognosis. Slight tremor in right upper extremity when she raises a glass of water. Lower extremities showed no definite static ataxia. Patient can not walk well on a straight line. Grasps at objects for support in walking and especially in turning round, but does not stagger much in walking straight forward. Walks slowly—slightly lame on right; no varus. Puts both feet down flat. Knee jerks are exaggerated; about the same on either side. Slight knee clonus on right. No ankle clonus. No Babinski.

Sensation: The lesser differences can not be determined on account of the mental condition. Pin prick is felt everywhere and no difference can be found in its perception on the two sides.

February 15: There is no tremor of hands. In lifting glass of water to mouth there is an occasional jerk of the upper extremity, especially of the right, and in holding out the hands there is an occasional slight involuntary muscular contraction. To-day she raises the feet well in walking. Left lower extremity is weak. Left upper extremity of fair strength.

Diagnosis.—Disseminated sclerosis (probable).

CASE 2.—E. W. H., female, 32, married, admitted to hospital, May, 1904, had been subject to epileptic attacks for eighteen years. She developed spastic paraplegia eight years ago, at the age of 24. At one time there was paresis of the left side of the face.

April, 1905: The spasticity has increased markedly during the past month. There is now loss of control of the bladder.

January, 1906: My examination shows a condition of spastic paraplegia. Increased knee jerks but no clonus and no Babinski.

The interesting point in this case is the increase in the spasticity in March and April, 1905, and their gradual increase since. This does not seem to be the immediate result of any attack or series of attacks. It is not an exhaustion paralysis in the ordinary acceptance of the term but is rather, as far as can clinically be determined, more of the nature of a slowly increasing degeneration. The real condition in such cases as this is only to be settled by autopsy.

CLASS III.

The third class is that in which the primary pathologic cause of the convulsions and other typical symptoms acts directly on the spinal cord as well as on the intracranial contents. The pathologic conditions produced in the brain would, in such case, be present also in the spinal cord, and we should find in the cord primary and not merely secondary lesions. It is probable that in typical idiopathic epilepsy lesions can be found in the cerebrum or cerebellum in practically all cases if the examination be sufficiently careful and extended. Are similar lesions to be detected in such cases in the spinal cord? I believe so.

Up to the present time, however, no definite evidence

of such lesions has been given. Chromatolysis and certain other changes in the cells of the spinal cord have been reported but the causation of these conditions is not yet so well settled that we can accept them as evidences of a primary organic disease. Chromatolysis may be caused, so far as yet appears, by a variety of causes and its significance is not determined. Whether the decubitus or bed-sores, which occur so suddenly and rapidly in epileptic status, can be considered as evidence of any spinal condition is also undecided. That they are connected with trophic disturbances there is no doubt. Even if the seat of this disturbance is in the spinal cord, it must be considered as a terminal condition rather than the outward manifestation of a well-defined organic affection of the cord which has been of the same character as that which produces the characteristic symptoms in the cerebrum. It is not a primary epileptic lesion, but a terminal affection.

CONCLUSION.

Since the paper was written I have received this statement from Dr. Southard: "Microscopic examination of a number of spinal cords from epileptics has yielded some interesting findings. These warrant more extended and systematic study." One case shows the effects of a terminal exhaustion state on the spinal cord. In the series of cords examined Marchi degenerations of a diffuse non-systemic character were found in almost every case. One case showed considerable fibrillar gliosis.

I believe that we have here an important field for further investigation and it is to call attention to this that this article is written.

DISCUSSION.

DR. HOWELL T. PERSHING, Denver, Colo., asked Dr. Bullard whether the cells of the anterior horns are more implicated than those of other parts of the cord. It is in these cells, Dr. Pershing said, that he would expect secondary changes such as are known to occur in the cortex of epileptics.

DR. W. N. BULLARD, Boston, said that up to the present examinations have been made of only about 15 of the cords. Dr. Southard stated that the cells of the anterior horn of the cord have shown the axonal reaction of Nissl. There was fatty degeneration of the nerve fibers in various places, but of such a character that the pathologist was inclined to believe that in many cases it might easily have escaped notice unless special search had been made in that direction.

MANIC-DEPRESSIVE INSANITY AND VISCERAL DISEASE.*

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The recent consolidation of the different forms of mania and of melancholia into the one disease called manic-depressive insanity is a notable achievement and at the same time furnishes one of the most important of the recent problems of psychiatry. The fusion of so widely differing symptom complexes into one type, and their presentation as a definite disease can only be justified by showing that the same pathologic process or, what is quite different, that the same cause underlies the manifestations in all cases. It is important to investigate and group the cases of so common a difficulty as the so-called manic depressive type, to find out whether the diagnostic criteria are justified, whether the prognosis is hopeless, as to permanent cure, as is implied in the definition ordinarily given of the disease and the treatment restricted to care and palliation, or whether some cases of the disease being curable, efforts should be made to discover and eradicate the cause of the difficulty. The answer to these questions is of vital importance to every patient in whom either elation or depression is a prominent symptom.

According to Kraepelin, manic-depressive insanity is "that mental disorder which recurs in definite forms at intervals throughout the life of the individual and in which a defective hereditary endowment seems to be the most prominent etiologic factor." According to the older classification, the diseases which are included in the new one are recoverable mania, simple mania, simple melancholia, melancholia agitata, periodical mania, periodical melancholia and circular insanity. All of the melancholias are here included except the senile form, and all of the manias which are not episodes of elation in the course of other mental disorders, as for instance, paresis or dementia precox. As the essential element in all of the symptom-complexes is emotion, either elation or depression dominating the clinical picture in each of them, and as visceral conditions notably influence emotion in both health and disease, the attitude of modern psychology toward the emotions in health is of importance as a starting point for the consideration of visceral action in mental derangement.

In brief, modern psychologists consider emotion the cognition of visceral change. If, for instance, a cause of grief is followed by the corresponding emotion, this does not happen as a direct cerebral reaction. The sequence is as follows: As a result of the bad news or the misfortune the viscera, the stomach, liver, heart for instance, are depressed and changed in their functioning and the cognition of the change is apprehended as the emotion. If the viscera were non-existent or their nervous connections with the brain severed or shunted, misfortune might be apprehended intellectually but not as emotion.

This theory, which can not be further elaborated at this time, receives powerful support from observation of the simplest illnesses and departures from visceral health. As examples, depression from liver disease or dyspepsia and elation in tuberculosis have long been familiar. The rich dyspeptic who is depressed, and as a result has delusions of poverty and the loss of friends, and the emaciated consumptive who looks for speedy recovery and is better every day until he dies, are mild prototypes of the manic-depressive form of insanity which, in its severe forms, fills our asylums. The interval between mental health and delirious mania is bridged by transition forms which vary through all possible intervening states of mild depression, depression with agitation, depression with delusions, depression with suicidal impulses, with hallucination, simple exaltation, exaltation with delusions and incoherence of ideas until the most serious forms of all are reached, the cases of alternating or of rhythmically recurring mania and melancholia. The question whether the mild and the severe cases are essentially the same is not purely an academic one. If they differ from each other only in degree, and if the milder forms are dependent on visceral disease and are curable the severer cases need not be considered necessarily hopeless. If the severe cases differ in kind and are essentially incurable the dividing line should be determined.

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Turning now to the mild cases, it is to be remarked that the ordinary accompaniment of visceral disease is depression. Exaltation is less common, or at any rate less obvious, but may be found even in cases of gastric and intestinal disorders. One of the commonest examples is furnished by the dyspeptic who finds himself elated and working at higher pressure than normal, and recognizes the condition as the sign of an undigested meal. Such patients can foresee the ensuing mild melancholy, remediable by a purge and subsequent care in diet. Quite as typical and almost as common are the women who find their duties increasingly hard, who cry easily, find life a burden and their friends hard to face, and along with this simple melancholy may or may not have backache, headache, indigestion and loss of weight. Every neurologist who has a care for the physical well-being of his patients has referred many such to the gynecologist and seen simple melancholia cured never to return or to return only with the recurrence of the physical cause.

The following case is one of a type more severe but almost as common as is the preceding:

CASE 1.—The patient, a woman, aged 28, after a summer spent in the woods camping and fishing and afterward in unusually good health, took up an amount of teaching that involved moderate over-strain. She soon began to be sleepless and depressed, she developed delusions that she was pregnant and that she had committed various unpardonable sins and procured a revolver with a view to committing suicide.

When seen she had grown steadily worse for two or three months. She had the usual coated tongue and pallor of the melancholic, tired easily, had no energy and no pleasure in life and was much occupied with her delusions. Examination revealed serious disease of both uterus and ovaries. Great improvement in the mental condition was apparent within a few days after an operation undertaken to relieve the pelvic conditions. The patient gained steadily in strength and cheerfulness for about a year and is now, two and one-half years after the operation, in good health.

My only excuse for citing so common a case is to point out the fact that it and similar cases are included in the group of manic-depressive insanities. In my experience such patients retain their mental health if the affected viscera do not again become diseased. One such patient, who made a good recovery from both her melancholy and her delusions, had a year or two after operation a recurrence of mental symptoms in connection with an attack of the grip. She specifically returned to mental health and remains well five years after pelvic treatment.

The clinical picture of agitated melancholy is, in my experience, often met in connection with gastric and intestinal disease. Mild melancholy is an almost regular accompaniment of indigestion, and this, under exceptional conditions, may rise to a condition of frenzied depression, with intractable nervousness and insomnia. One such patient, a man sixty-three years of age, in whom the attacks of mental alienation followed dysentery, responded readily and rapidly to purgation, milk diet and the salicylates, when hypnotics and sedatives were powerless to give more than the slightest relief. In this case agitation and depression were as extreme as I have ever seen them in an asylum case and the symptomatic diagnosis of melancholia agitata, in my opinion, amply justified by the conditions present.

Maniacal cases furnish the more intractable examples of the manic-depressive complex. Two patients have given interesting, although incomplete confirmation, of the suggestion that mania is visceral and sometimes due to curable visceral disease.

CASE 2.—This patient presented the clinical features of acute mania in the puerperium. The flight of ideas, singing, rhyming, word salad and excitement, and elation day and night were typical of mania in the stage of delirium. After improvement had begun, supporting a heavy retroflexed uterus, was followed by sudden increase in lucidity. Three days later the patient had a relapse and it was discovered that she had removed the pessary. When it was inserted improvement was at once apparent. A curetting was refused by the relatives, and the patient was removed to an asylum and several years later was still there with chronic mania.

CASE 3.—This was a case of recurrent mania, alternating with hebetude. Patient had been three times in an asylum for periods of five to six months, with intervals of a year to a year and one-half of mild depression. During her exacerbations she had typical exaltation, was violent and had delusions with rapid incoherent speech. She was seen at the beginning of an excited period, which came to an end, and the patient became calm after support of the uterus by a pessary. She was, however, far from normal, her general health being decidedly below par. She could bear little exertion, her digestion was poor and she was anemic and emaciated. Some months after the original operation she began to be excited and it was evident that she was again drifting into a maniacal condition. The uterus was discovered to be out of place, and reposition was followed by another subsidence of loquacity and elation.

Operations.—Five or six months later a recurrence of the same symptoms led to a more radical operation. The uterus was supported by being stitched to the abdominal wall and one ovary, which was discovered to be markedly sclerosed, was removed. This operation was followed by an improvement which lasted for almost a year. Then the symptoms returned and a second operation was undertaken. The left ovary, which was previously found in a comparatively good condition, had become markedly sclerotic and was removed.

Postoperative History.—This operation was followed by complete relief. The mental condition became normal for the first time since my acquaintance with the case. The patient, instead of being, as heretofore, pale and emaciated, grew fat and rosy. Two years and one-quarter have elapsed since the last operation and about two years since her return to health. Even this short time has already furnished a complete justification for the operation by giving the patient complete relief from her previous distressing condition, although a mild relapse just inaugurated makes it clear that cure is by no means complete.

That these cases are simply illustrations in abstract scarcely needs statement. So far as melancholia is concerned they are such illustrative cases as may be furnished by any physician of wide, or even of moderate experience, in neurology. Relapse in these cases of melancholia has been in my experience rare, temporary, and due to recurrence of visceral disease or profound toxemia. Most of the patients have remained without relapse for periods varying up to twelve years.

With regard to the cases of mania criteria are more difficult. My own cases are so few in number as to be suggestive rather than conclusive. That mania is like melancholia, essentially visceral in origin, seems to me so well established as to make its cure by correction of the underlying lesion probable, *a priori*.

The recent introduction of the term manic-depressive insanity then marks what may be called the agglutinative period in symptomatology. The time is not yet ripe for a final judgment on this nomenclature. In the absence of a firm pathologic basis for either the division or the uniting of the different symptom-complexes that compose the group, it can still be said that the name does not probably represent an ultimate clinical fact, but rather a stage between the earlier imperfect divisions and a later and better classification on a pathologic basis.

The test of a theory is its ability to account for ob-

served facts. In proportion, as it does this, it possesses the weight of probability. If then, the visceral theory of the origin of mania or of melancholia, or both, is capable of furnishing an adequate explanation of their clinical features, it will be worthy, at least, of standing until it is supplanted by a better theory, on a basis of wider experience. What may we fairly expect if emotions in both health and disease are reactions from visceral change? Not that the same visceral diseases will always produce the same emotional result. This would be contrary to what we know of such effects of visceral disease, as fever and delirium. The absorption of toxins and the visceral irritation in typhoid, malaria and meningitis, carry with them reactions of fever, of pain and of delirium, the amount of the reaction varying as widely as possible in different individuals. The psychic pain of melancholy is like physical pain in being an individual reaction and only a little less widespread. The elation of mania is less common, it is a reaction of a different species but of the same family with pain and depression. So far then as concerns their variability, elation and depression are in accord with other modes of reaction to visceral disease. They resemble these too in being alike the result of disease of different viscera. There is no viscus of pain and none of depression, no viscus of pleasure and none of sorrow.

If manic-depressive states are modes of reaction to changes in the viscera we should expect some of them to be curable and others to be incurable. We should expect cases occurring in the old to be less hopeful than those in the young. We should expect some curable cases to occur even in the aged. We should expect cases of long standing to be less susceptible of cure than recent ones for two reasons, that the underlying disease has taken deeper root and the consequent changes in the cerebral tissues and the circulation have become more pronounced. These are all facts of common observation of which I have cited a few instances.

If the manic-depressive insanities retain their place as a clinical entity, this must be not as symptom-complexes, but on the basis of a common pathology. That pathology must be the broad one of visceral change in general, as both mania and melancholia occur as sequences of disease of many kinds, affecting any one or several of the viscera. The precise nature of the resulting symptom-complex does not depend on which particular viscus is diseased, but apparently on the reaction mode of the person affected; just as delirium depends, not on the location or the kind of the inflammation; but that it is caused by inflammation no one doubts; that it sometimes outlasts the inflammation which causes it is also true; that the nature of the delirium is determined by the predisposition of the individual will, I think, be admitted, delirium in all these ways running parallel with the manic-depressive reactions at present under discussion.

DISCUSSION.

DR. W. H. HUMISTON, Cleveland, gave the condensed histories of the six cases in which he was associated with Dr. Upson.

Five of the patients were operated on for pronounced pathologic conditions found in the pelvic organs; the recoveries have been complete and the results permanent up to the present time. The one patient who refused operative measures was finally removed to an asylum where she still remains unimproved. The bimanual examination in her case revealed a large tender retrodisplaced uterus, ovaries enlarged and prolapsed. By placing her in the knee-chest position and replacing the uterus and fitting a pessary, she was made temporarily better, but on her getting out of bed and walking about the tender, enlarged ovaries were irritated by the pessary and it was removed. Operation in this case, Dr. Humiston believes, would have given excellent results.

CASE 1.—Woman, aged 46, had had profound increasing melancholy for several years, with apathy, disinclination for society, warped views of her duties and of her relations with her family and friends, amounting to delusions. She also had lassitude, pallor, muscular weakness and retroverted, enlarged and tender uterus.

Purulent disease in tubes and ovaries was corrected by operation. The result was a return to physical and mental health, which persists after six years.

CASE 2.—Melancholia agitata, folowing dysentery, in a man aged 63. There was frenzied depression with insomnia and motor unrest and fear of insanity and the asylum, which might or might not, under the circumstances, be considered as an insane delusion. Steady recovery took place on purgation, restricted diet and intestinal antiseptics. There is no recurrence after 12 years.

CASE 3.—A woman, aged 28, had melancholia, with delusions of sexual and other crimes and preparations for suicide. She had had rheumatism for four or five months, with nervousness, pallor and weakness. The delusions and depressions were profound, constituting a complete psychic change from her former mental habit. Recovery was prompt and complete after pelvic operation undertaken 2½ years ago for sclerocystic ovaries, chronic catarrhal appendicitis and adherent glans clitoris.

CASE 4.—Woman, aged 58, had profound depression, with insomnia, motor unrest and evidences of intestinal indigestion following a period of anxiety. Purgation, milk diet, and intestinal antiseptics were promptly followed by subsidence of both the depression and the agitation. Insomnia also disappeared, although previously refractory to sedatives and hypnotics. Recovery persists after 11 years.

CASE 5.—An unmarried woman, aged 28, much depressed for about a year, made several attempts at suicide. She had marked delusions. Pelvic operation was performed eight years ago for sclerocystic ovaries and retroverted uterus. The result was complete and permanent recovery.

CASE 6.—Woman, aged 49, had profound melancholy with delusions of six or eight months' duration. Pelvic operation was performed three years ago for lacerated cervix, retroflexed uterus and sclerocystic ovaries; a small myoma in the posterior uterine wall was not removed. One relapse of a few weeks' duration followed an attack of grippe, a few months after operation. Recovery was otherwise complete and the patient is now well after three years.

CASE 7.—Woman, aged 27, had delirious mania in the puerperium, accompanied by exaltation, singing, rhyming and ribald speech, night and day. Replacing the uterus with support of pessary was, on two occasions, followed by marked improvement, but operation was refused and chronic mania with delusions remains after seven years.

CASE 8.—Unmarried woman, aged 24, had recurrent mania alternating with periods of mild depression, the mania being characterized by typical flight of ideas, delusions, exaltation, etc. The patient has been three times in a private asylum. On two occasions supporting the retroflexed uterus gave temporary relief; finally curetting of the uterus and removal of the ovaries was followed by recovery, persistent 2½ years after the operation. The procedure has, even in this short time, fully justified itself by the condition of the patient, who is really robust for the first time since Dr. Humiston's acquaintance with her. She is now married and is taking full care of her household duties, and has gained twenty-six pounds in weight.

Dr. Humiston believes that the majority of cases of melancholia, without family history of insanity, in which pronounced pathologic conditions in the pelvis exist, can be cured by resorting to surgical procedures.

DR. FRANCIS X. DERCUM, Philadelphia, declared that he is firmly convinced that maniac depressive insanity is primarily a neurosis. The overwhelming factor of heredity, the absence of visceral complications and the variability of visceral complications when present, justify no other inference than that the disease is a nervous disorder and that visceral symptoms when

present are merely complications. Recovery from insanity, subsequent to operations of various kinds is, of course, not unknown. Recovery has been known to follow accidents, such as injury to the head, after operations of various kinds, after infections and after indeed anything that may profoundly modify the general nutrition. The well-known influence of typhoid fever in bringing about recovery in insanity, is a convenient illustration. If manic depressive insanity is dependent on visceral lesions, these lesions ought to be of definite character. In view of the overwhelming factor of heredity how, he asked, are we to attribute any importance to such conditions as retroversion of the uterus. The truth is that retroversion is in many cases merely a retention of the primary position of the uterus and is not of itself really pathologic. Attempts to attribute manic depressive insanity to diseases of the digestive tract or to other visceral affections meet necessarily with the same fact, namely, the entire absence of a close etiologic relationship.

DR. ALFRED GORDON, Philadelphia, referred to the work of a French surgeon, Dr. Picqué, who made an exhaustive study of this subject. The work was done in one of the asylums of Paris and from a study of the record of these cases one is impressed with the fact that while some of the patients improve, the majority have recurrences, in spite of the correction of the retroversion of the uterus or any other pelvic disease. To Dr. Gordon it seemed difficult to connect, in any pathologic sense, as cause and effect visceral complications, or defects in the viscera with the psychoses, discussed by Dr. Upson.

DR. HENRY S. UPSON, Cleveland, Ohio, said that he is well aware of the unpopularity with many physicians of the theory that psychoses are dependent in any way on visceral disease, but it seemed to him that the bad repute of surgical intervention in these cases is due preëminently to the one fact that some early good results were obtained by operation on the pelvic viscera. Because the ovaries had been removed in some cases and melancholia cured, it was thought, formerly, that melancholia was an ovarian disease and that a cure would follow in all cases. There was too much enthusiasm, which resulted in disappointment, because recovery did not take place in all cases in which the ovaries were removed. It is a mistake to think that manic-depressive insanity in all these cases is the result of any one pathologic process, or has any well-defined syndrome in all cases. Dr. Upson believes that such statistics as Dr. Gordon mentioned ought not to be given too much weight, because such observations are usually made by a surgeon with the idea that manic-depressive insanity is a surgical disease and may be relieved by surgical procedure, especially in one class of cases.

THE OPSONIC INDEX IN MEDICINE.*

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In 1895, Denys and Leclef[1] first called attention to the effect of blood serum on phagocytosis by leucocytes. They were the first to produce reliable experimental evidence that substances which alter microbes in such a way as to permit their being ingested by the leucocytes exist in the blood serum of immunized rabbits. From careful experiments *in vitro* they concluded that in an immunized rabbit the leucocytes obtain their power of engulfing the bacteria from some other property of the serum. The immunized animal fights the bacteria, first, by the direct action of its serum; second, by its leucocytes.[2] The latter always owe to the serum the commencement of their power.

In 1897, Bordet[3] was unable to confirm their results. In the same year Mennes[4] showed that the immunity of guinea-pigs inoculated with toxins or cultures of pneumococci depends on a modification of their serum whereby an active phagocytosis is induced, and that this is not due to any special activity of the leucocytes. In 1902, Leishman[5] devised a method of quantitatively estimating the phagocytic power of blood to staphylococci. In 1903, Wright and Douglas[6] introduced the word "opsonin" (*opsono*, I prepare the food for) to characterize the substance in normal blood which they believed prepared the microbes for ingestion by the phagocytes. They were able to show that this substance exists in the serum, that it is partly thermolabile, being largely destroyed at 60 C. in ten minutes, and that it acts on the bacteria and not on the leucocytes.[7]

In 1904, Neufeld and Rimpau,[8] independently of Wright, alluded to the two well-known elements in immune sera (i. e., antitoxin and bactericidal substances) and stated that they had found a third element which they claimed sensitized the bacteria, but did not act on the leucocytes. They treated leucocytes with antistreptococcus serum for a certain time, suspended them in normal serum, and found that they did not ingest virulent streptococci (note that they employed virulent organisms). On the other hand, after treating virulent streptococci with antistreptococcus serum and then washing them free from the serum with salt solution, they found leucocytes could then actively ingest these sensitized microbes. They obtained corresponding results with pneumococci. They proposed to call their sensitizing substances "bacteriotropic" substances. To these substances Wright and Douglas have given the name "immune opsonins."

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Sur le mécanisme de l'immunité chez le lapin vacciné contre le streptococcus pyog.," La Cellule, 1895, vol. xi, p. 198.

2. A summary of their conclusions follows:

(a) The serum of normal rabbits exercises no bactericidal action on the *Streptococcus pyogenes*.

(b) The serum of a rabbit on whom a certain degree of immunity to streptococcus has been conferred by vaccination, will delay the development of streptococcus for several hours and will sometimes exhibit a true bactericidal power.

(c) Leucocytes from a normal rabbit added to the serum of a normal rabbit exhibit only a feeble phagocytic power to streptococcus. The leucocytes die before their usual term of life.

(d) Leucocytes from a normal rabbit added to the serum of a vaccinated rabbit energetically destroy streptococcus. The leucocytes preserve their normal duration of life.

(e) Leucocytes from a vaccinated rabbit added to its own serum act the same as above (d).

(f) Leucocytes from a vaccinated rabbit added to the serum of a normal rabbit act as above (c).

(g) If a dose of streptococcus, lethal for a normal rabbit, is injected into the pleura of a vaccinated rabbit, the serum prevents the development of a pleurisy.

(h) If a dose of streptococcus capable of producing erysipelas in a normal rabbit is injected under the skin of a vaccinated rabbit the infection is prevented especially by leucocytes.

3. Ann. de l'Institut Pasteur, 1897, p. 201, note.

4. "Antipneumokokken Serum und der Mechanismus der Immunität des Kaninchen gegen den Pneumokokkus," Zschr. f. Hyg., 1897, vol. xxv, p. 413.

5. "Method of Estimating Phagocytic Power," Brit Med. Jour., 1902, p. 73.

6. Proc. of Royal Soc., vol. lxxii, p. 357.

7. The following experiments were responsible for their conclusions:

(a) Staphylococcus emulsion + washed corpuscles + NaCl solution at 37 C. for 15 minutes = no phagocytosis. Add serum; phagocytosis occurs.

(b) Three vols. washed corpuscles + 3 vols. serum at 37 C. for 15 minutes, then heated to 60 C. (destroying the thermolabile opsonin). Cool + 1 vol. emulsion staphylococci at 37 C. for 15 minutes, result is little or no phagocytosis.

(c) Three vols. serum + 1 vol. emulsion staphylococci at 37 C. for 15 minutes, then heated to 60 C. + 3 vols. corpuscles at 37 C. for 15 minutes, result is marked phagocytosis. Hence, action of serum is mainly to modify the bacteria in such a way as to render them a prey to the phagocytosis.

The organisms which are thus acted on are staphylococci, streptococci, gonococcus, pneumococcus, *Micrococcus melitensis*, vibrio of Asiatic cholera, and colon, pest, typhoid, tubercle, anthrax, proteus, and dysentery bacilli.

8. Neufeld and Rimpau: "Ueber die Antikörper der Streptokokken und Pneumokokken Immunserum," Deutsch. med. Wochschr., 40, 1904, Sept. 29, p. 1458; also Ztschr. f. Hyg., 1905, vol. li, p. 283.

METHODS OF ESTIMATING PHAGOCYTOSIS QUANTITATIVELY.

In 1902, Leishman[5] first devised a method for quantitatively estimating phagocytosis. He mixed equal quantities of blood and a suspension of staphylococci in salt solution in capillary pipettes, blew out a drop of the mixture on the end of a glass slide, on the other end a similar mixture, using control blood, covered with cover glasses and incubated for one-half hour in a moist chamber. After sliding off the cover glasses the preparation was fixed and stained. By counting the cocci in a certain number of leucocytes an average per leucocyte was obtained, which compared with the control constituted the "phagocytic index."

Wright's[6] modification[9] of this method is as follows: Equal volumes of (1) a bacterial emulsion in salt solution; (2) washed blood corpuscles; and (3) the serum to be tested are measured in a capillary pipette fitted with a rubber teat, mixed thoroughly by blowing out on a slide several times, drawn up in the same pipette, the end sealed in the flame, and incubated for fifteen or twenty minutes at 37 C. A drop of the mixture is then blown out on a slide, and a smear fixed and stained. The enumeration of the bacteria in twenty to fifty polymorphonuclear neutrophiles is made under an oil immersion lens and an average per leucocyte obtained. The ratio of this average to that for a normal serum, using the same emulsion of leucocytes and corpuscles, constitutes the "opsonic index."[10]

In general the procedure for making the bacterial suspension is as follows:[11]

TECHNIC.

In the case of staphylococci, streptococci, pneumococci, gonococci, and colon bacilli, the twenty-four hour growth of agar slants is washed off with normal salt solution.* This is allowed to settle and the upper part of the turbid fluid is pipetted off and centrifugalized in a small tube for from five to eight minutes at high speed. The slightly opalescent supernatant fluid is then carefully taken off in a pipette and is used for the bacterial suspension.

In the case of tubercle bacilli, it is necessary to proceed a little differently. The conglomerated mass of bacilli is heated at 100 C. for ten minutes† and a loopful is ground up in an agate mortar, adding from time to time a drop of salt solution until about 2 c.c. have been added. This is centrifugated as in the case of the cocci for from five to eight minutes, until the supernatant fluid is only slightly opalescent. This is pipetted off and used for the bacterial suspension.

The washed corpuscles are obtained by receiving thirty to forty drops of blood[12] into about 30 c.c. of a 1 per cent. sodium citrate in 0.85 per cent. salt solution. This prevents coagulation. The corpuscles are swung completely down in the centrifuge and are washed twice in 0.85 per cent. salt solution to remove all traces of serum and citrate. After the final washing, all the salt solution is pipetted off and the upper layer of corpuscles, which is rich in leucocytes, is taken for the "washed corpuscles."

The serum is obtained by receiving the blood in small glass capsules with curved capillary limb, allowing it to clot and then centrifugating so that the clear serum can be easily removed.

Illustration of the Method.—If it is desired to obtain the opsonic index to staphylococci of a patient suffering, say, from acne, equal parts of washed corpuscles, bacterial suspension and patient's serum are mixed in the pipette and placed in the incubator. In another pipette equal parts of washed corpuscles, bacterial suspension and normal serum are likewise mixed and incubated. At the end of 15 minutes smears are made from each specimen, fixed and stained. The number of staphylococci per leucocyte is obtained in each case by counting the cocci in the first 50 polymorphonuclear neutrophiles encountered and making an average. If the average for the patient's blood is 6 cocci and that for the normal is 8, the opsonic index to staphylococci would be 6/8 or 0.75.

FIXING AND STAINING.

For tubercle bacilli our slides have been fixed in formalin vapor, stained in anilin fuchsin, decolorized in acid alcohol, washed in 1/1,000 sodium carbonate, and counterstained with methylene blue. For cocci and colon bacilli we have fixed and stained in Jenner's stain, counterstaining when necessary with methylene blue.

DIFFICULTIES.

In a method of this kind involving so many steps, there are necessarily many sources of error and a slip in technic at any point will often invalidate several hours' work. A brief mention of some of the difficulties and sources of error met with by us may prove useful. It is very important that the bacterial emulsions be uniform, free from clumps, and of the right concentration; if too thick, the bacteria can not be counted accurately, and if too thin, there will not be enough to strike a proper average. For cocci, counts averaging 5 to 12, and for bacilli, 3 to 5, are ideal.[13]

The greatest difficulty occurs with tubercle bacilli, since on artificial media they grow only in conglomerated masses. For this reason they have to be ground up in the mortar; but there is an added difficulty from the fact that even after they are mechanically separated they are clumped by salt solution of any concentration greater than 0.1 per cent., and living bacilli, furthermore, are agglutinated by any blood serum. To obviate these difficulties, the bacilli are heated at 100 C. for ten to fifteen minutes and the suspension is made in 0.1 per cent. salt solution.† In using cocci and colon bacilli it is necessary to use young cultures, since the dead and dying cocci stain very poorly and irregularly.

Another source of error in making a series of tests is dependent on the fact that the number of bacteria ingested by the leucocytes during incubation varies directly as the time which the leucocytes have to act. This is shown very clearly by the following table:

EFFECT OF TIME OF INCUBATION ON THE AMOUNT OF PHAGOCYTOSIS.

Incubation time.	Number of staphylococci per leucocyte.
5 minutes	5.7
10 minutes	8.2
15 minutes	11.6
20 minutes	14.5
25 minutes	15.2
45 minutes	19.4
1 hour	28.5
2 hours	Too many to count.

For slight differences in time, however, the error is fortunately a small one.

For the sake of accuracy the capillary pipettes should be approximately of the same caliber.

The "leucocytic cream" of the washed corpuscles should be used fresh as otherwise the leucocytes stick together, and it should be as thick as possible in order to make good smears.

SMEARS AND COUNTING.

Smears are made best by using a slide with corner broken off and the end made rough with a file. They should be fairly thick and are more easily made by pushing the slide.§

9. "Blood Fluids in Connection with Phagocytosis," Ibid, Sept. 1, 1903, vol. lxxiii, p. 130.

10. Simon (Johns Hopkins Hospital Reports, January, 1906) has still further modified this technic by making successive dilutions of the control and test sera and comparing the points at which phagocytosis is practically abolished, or by comparing the percentages of leucocytes engaged in phagocytosis in a given dilution.

11. The details of our technic are essentially those of Wright, to whom we wish to express our thanks for his kindness in personally explaining his methods to one of us.

* Wright informs us that he now employs much younger cultures of the streptococci, gonococci, and colon bacilli, 4 to 5 hours growth.

† Wright now heats the bacillary mass to 100 C. on three successive days and employs a 1.5 per cent. salt solution.

12. In all cases we have used leucocytes from supposedly normal human beings, but it would seem from the researches of other investigators that the amount of variation in the phagocytic power of leucocytes from different individuals of the same species, is so slight as to be negligible.

13. A scale of opalescence by which to judge of the thickness of the bacterial suspension can be made by having a series of tubes of barium sulphate of different concentrations. (McFarland).

§ Wright rubs the slides with a very fine emery paper obtained at a jeweler's and uses a smooth smearer.

In counting, the edges of the smear are selected as most of the leucocytes collect there and at the end, and it is better to take isolated leucocytes or at most groups of two or three, as the counts for these are more uniform than when large masses of leucocytes are enumerated. We have found it necessary to count a larger number of leucocytes than did Wright and Douglas in order to get a fair average, consequently we have usually counted 100 leucocytes in working with the tubercle bacillus, and 50 to 60 when using the cocci and colon bacillus.

The time that it takes to complete a set of observations depends largely on the worker, but after the bloods are collected and the tubes opened, one should in an afternoon be able to make all preparations and make slides of fifteen test sera, using each to two different bacteria.

The enumeration takes time and depends very much on the quality of the smears. With practice one can count on an average about five slides an hour, sometimes more, but often less. To make an index of two or three sera to a single germ should not take more than two hours (two workers).

NATURE OF OPSONINS.

Relation to Amboceptors.—Savtchenko[14] and Dean[15] regard certain opsonins and amboceptors as identical. Hektoen[16] regards opsonins as distinct from amboceptors, and in proof of his opinion states that under certain circumstances normal serum may possess lytic, but not opsonic powers, and *vice versa;* again, that immunization may give rise to opsonic, but not to lytic substances; and, further, that heat may destroy the opsonic power without affecting the lytic amboceptors and *vice versa.* Thus, while opsonin for anthrax bacilli, present in the serum of normal dogs, is destroyed by heating at 60 C. for thirty minutes, the amboceptor for anthrax bacilli, present in the serum of normal dogs, is not affected by heating at 65 C. for thirty minutes. Moreover, while the serum of white rats is normally anthracidal owing to the presence of a thermostabile substance that is inactivated by neutralization of the serum with oxalic acid, the same serum contains a thermostabile opsonin for anthrax bacilli which, however, is not inactivated by oxalic acid.

Relation of Opsonins to Toxins and Complements.—Walker's[17] experiments with diphtheria bacilli and tubercle bacilli showed that toxins as well as opsonins produce an effect on phagocytosis, but that they act independently of one another. Opsonins may be considered analogous to toxins and complements in so far as they have two distinct groups, haptophore and opsonifore. Like complements, opsonins may be neutralized or bound by various salt solutions, Ca, Ba, $MgCl_2$, K_2SO_4, $NaHCO_3$, etc., and so prevented from acting on bacteria.

Relation of Opsonins to "Stimulins."—In his treatise on "Immunity," Metchnikoff described a series of experiments conducted by himself, Gengou, Klemperer, Besredka, and others, in which the introduction of serum, sometimes normal, sometimes immune, into the serum sacs of experimental animals demonstrated a greatly enhanced phagocytic activity in the leucocytes of the exudation subsequently removed from the sac for examination. To the substance which these observers conceived to be present in such sera they gave the name "stimulin," and to the presence of these "stimulins" in immune sera Metchnikoff and his school attributed an important rôle in the processes of both active and passive immunization.

Wright and Douglas[6] endeavored to determine whether unheated serum contained "stimulins" in addition to opsonins. They found the same difference between the action of heated and unheated serum toward staphylococci heated to 115 C. as toward living germs. Their expectations were based on the fact that typhoid bacilli heated above 70 C. acquire a resistance to bacteriolytic effect. Although their experiments with particles of India ink and carmine were unsatisfactory, unheated serum seemed to facilitate their phagocytosis slightly more effectually than heated serum. Staphylococci and unheated serum were digested in an incubator for varying times and then divided into two portions. The first was immediately mixed with corpuscles, the second was first heated to 60 C. and then mixed. In every case the phagocytic power was greater when the heating was omitted and no difference could be detected in specimens left in the incubator fifteen minutes from those left one hour; thus they were obliged to leave the question unsolved.

In 1905, Leishman[18] showed that sera derived from cases of Malta fever or enteric fever, or from animals immunized with living cultures of the germs of these diseases, contain substances which when added to normal human blood are capable of increasing the phagocytic activity of the leucocytes of that blood. He also showed that these substances were specific and thermostabile, withstanding a temperature of 60 C. for fifteen minutes. No evidence of the presence of these substances could be found in the sera of normal men or animals. He also showed that these substances were not identical with agglutinins, that they acted directly on the leucocytes and not on the bacilli. Metchnikoff suggested the name "opsonic sensitisers" for these substances. Wright suggested that they might be thermostabile opsonins in spite of the fact that opsonins act only on the bacteria, while these substances, if the work and statement of Leishman are to be accepted as correct, act on the leucocytes.

Effect on Opsonins of Various Conditions and Agencies.—1. *Standing:* The opsonic power of serum kept at 2 C. is practically unchanged in ten days, but it is destroyed in three days if the serum be kept at 37 C. Without referring to the temperature, Wright and Douglas say, "Opsonic power of blood disappears gradually on standing. In five or six days it is only about one-half as much as the original."

2. *Sunlight:* Exposure to bright sunlight for three hours reduces opsonic value about one-third.

3. *Heat:* The opsonic power of any serum is but little impaired by heat below 50 C., but that of normal serum is rapidly destroyed at temperatures of 60 C. or above. Normal human serum contains an opsonin for typhoid bacilli that resists heating above 60 C., and there is an opsonin for anthrax bacilli in the serum of white rats that resists heating to 70 C. Dean[15] believes that some of the opsonin is unaltered even by heating to 60 C., because on exposing bacteria to heated serum for a longer period than fifteen minutes some phagocytosis occurred.

Immune opsonins are more resistant than the normal. Leishman[19] and his co-workers showed that the serum of persons vaccinated against typhoid fever contained sufficient opsonin to promote some degree of phagocytosis after heating to 56 C. Hektoen[16] mentions that he has several times noted a typho-opsonin in the serum of

14. Ann. de l'Institut Pasteur, 1902, xvi, p. 107.
15. Proc. Royal Soc., 1905, lxxvi, p. 506.
16. THE JOURNAL A. M. A., May 12, 1906, p. 1411.
17. "The Relative Influence of Blood Fluids and Bacterial Toxins on Phagocytosis," Jour. Med. Research, Nov., 1905, p. 173.
18. "Some Experiments in Connection with Stimulins," Trans. Path. Soc., London, 1905, lvi, p. 344.
19. Jour. of Hyg., 1905, v, p. 380.

convalescents from typhoid which resists heating to 70 C. for thirty minutes. Immune hem-opsonins are also thermostabile.

Dilution: The opsonic power of serum is diminished in proportion to the dilution. Simon[20] has utilized this principle in estimating the opsonic content of serum.

5. Chemicals and Drugs: Hektoen and Ruediger[21] showed that the opsonic action of serum may be diminished or inhibited by solutions isotonic with the serum of $CaCl_2$, $BaCl_2$, $SrCl_2$, $MgCl_2$, K_2SO_4, $NaHCO_3$, $Na_3H_5C_6O_7$, $Na_2C_2O_4$, $K_4Fe(CN)_6$, formalin, lactic acid and chloroform. They suggest that certain so-called negatively chemotactic substances, of which lactic acid is a good example, owe their effect to neutralization or destruction of the opsonin. The diminution of resistance produced by lactic acid to various infections and ascribed to its direct repulsion of phagocytes is, therefore, perhaps dependent primarily on the anti-opsonic action of the acid. The addition of potassium iodid in small amounts to serum does not interfere with its opsonic power.[22]

The administration of potassium iodid has no influence on the opsonic index. The iodid eruption is not associated with a low opsonic index. Owing to the fact that nuclein has a bactericidal action and may cause leucocytosis when introduced into the blood stream, the idea occurred to Huggard and Morland,[23] in 1905, to determine whether these manifestations were also accompanied by any change in the opsonic index after the employment of nuclein or yeast.

After a single dose of 3 gm. of yeast the opsonic index dropped for two days and then rose some distance above the normal. As has been noted, this rise in opsonic index occurred at the time when the leucocytosis was diminishing and below normal. Huggard and Morland also made the observation that some of the lowest opsonic indices in cases of tuberculosis under their observation occurred in heavy smokers.

6. Daboia Venom: The opsonic index is diminished on digestion of serum with daboia venom.[6]

RELATION OF OPSONINS TO LEUCOCYTOSIS.

From the fact that leucocytosis is of almost universal occurrence in the course of infections, it might be thought that some relationship existed between the quantity and quality of the leucocytosis and the opsonic content of the serum.

In their research on the therapeutic effect of the administration of yeast in tuberculosis, Huggard and Morland[23] found that, after a preliminary rise, the number of leucocytes remained constantly below normal. As the opsonic index in these cases was at first low and later high, it was apparent that there was no direct relationship here between leucocytosis and opsonic index. The same results were obtained by Bulloch and Ledingham.[24] They employed tallianin and sodium cinnamylicum, both of which increased the number of leucocytes without increasing the opsonic index, thereby showing also the lack of relationship between the two.

20. Johns Hopkins Hosp. Rep., Jan., 1906.
21. "Studies in Phagocytosis," Jour. Infect. Dis, 1905, vol. ii, pp. 129, 141.
22. Western: "Influence of Potassium Iodid on Resistance of Blood Fluids to Staphylococcus Albus," Brit. Jour. of Dermatology, 1905, August.
23. "Action of Yeast in Tuberculosis and Its Influence on the Opsonic Index," Lancet, June 3, 1905, p. 1493.
24. "Treatment of Tuberculosis by Tuberculin," Lancet, Dec. 21, 1905, p. 1603.

SOURCE OF OPSONINS.

Up to the present time very little has been determined concerning the source of the opsonins, but Denys and Leclef, Wright and Douglas, and Neufeld and Rimpau have all shown that the opsonin exists in the blood serum and not in the leucocytes.

The lack of any relation between opsonins and leucocytosis might be regarded as some evidence against Metchnikoff's belief that the leucocytes themselves furnish opsonin to the serum.

RELATION OF VIRULENCE OF BACTERIA TO OPSONINS.

Denys and Leclef[25] (1905), Hektoen and Ruediger[24] (1905) and Hektoen and Horton[16] (1906) have confirmed Metchnikoff's fundamental conception that the increase of virulence of a certain organism goes hand in hand with its resistance to phagocytosis. They worked with streptococci, staphylococci, pneumococci and anthrax bacilli.

Hektoen[16] shows the effects of different degrees of virulence in the following way: Virulent organisms, freed from anti-opsonic substances by washing, on being heated at 65 C. for thirty minutes, are not opsonified when treated with normal serum. Similar treatment of the avirulent strains has no effect on their phagocytability. Virulent streptococci which are not rendered phagocytable for rabbit and guinea-pig leucocytes by normal serum (rabbit, guinea-pig, human) are taken up to some extent by human leucocytes after treatment with human serum. It is also known that virulent cocci are subjected to phagocytosis under the influence of immune serum and, further, that immunization of animals with virulent cocci increases the opsonin in the serum. From their work, consequently, it may be concluded that the insusceptibility of virulent cocci to phagocytosis probably does not depend on any lack of affinity for the opsonin, but rather it would seem on increased resistance to its peculiar action. Virulent bacteria also probably differ from the non-virulent in producing substances which are harmful to the phagocytes.

Hektoen suggests that the relative susceptibility of various bacteria to phagocytosis under the influence of normal serum may be quite an accurate index, of which practical use might be made, of virulence.

(To be continued.)

CERTAIN FACTS CONCERNING FAUCIAL TONSILS.*

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CHICAGO.

Preventive medicine is the most important part of our work as physicians. Experimentation and research is being conducted in every branch of medicine. Efforts to prolong life by making foods of more nutritious character, physical development to produce greater resisting power of the individual and the prevention of bodily ill and dissolution by unfavorable conditions, are being studied by all scientists.

As specialists we are aware of many conditions which may and do impair our health and it becomes of interest to all to have a full understanding of things pertaining thereto. I therefore present some observations made in the last few years on the entrance of tuberculosis into

25. Cent. f. Bakt., 1898, vol. xxiv, p. 685.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

the general system, with special reference to the faucial tonsil. While my work may not be new in any particular, it is at least original and I submit it therefore to your consideration.

In order to understand the gland which we are about to consider, let us look at it first as an anatomic part.

ANATOMIC DESCRIPTION.

Formation of the Faucial Tonsil.—The tonsil appears at about the fifth month of gestation. With the appearance of the horizontal fissures in the lateral foregut, there appear the formation of five arches or plates with intervening clefts. From the first arch, the lower jaw develops. From the second arch, the anterior pillar of the fauces and a part of the hyoid bone develops. From the third arch, the posterior pillar develops. The cleft between the second and third arches, forms the fossa of Rosenmueller above and the sinus tonsillaris below.

The palate is formed by the ingrowth of the palatal plates from the upper jaw which meet in the median line. These plates extend backward and cross the second and third visceral arches and the intervening cleft, dividing the fetal pharynx into an upper and a lower

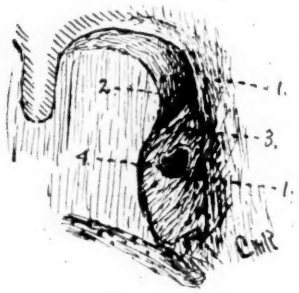

Figure 1.

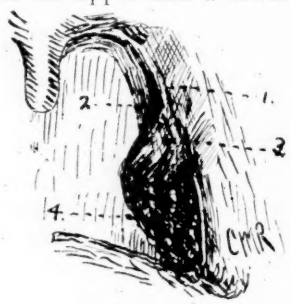

Figure 2.

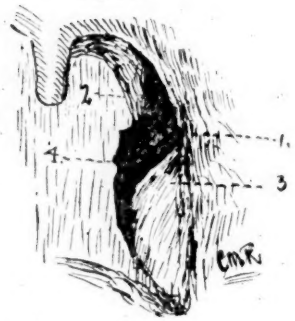

Figure 3.

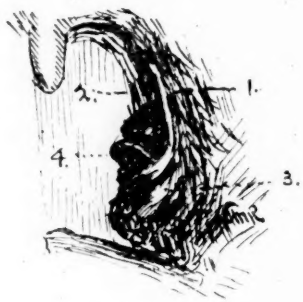

Figure. 4.

Figs. 1, 2, 3, 4.—Various forms of the plica tonsillaris. 1. Anterior pillar. 2. Posterior pillar. 3. Plica tonsillaris. 4. Tonsil.

series of parts. In the upper part, the Eustachian tube is developed from the cleft between the first and second arches. Behind this is the fossa of Rosenmueller.

Corresponding to this cleft below the soft palate, is the sinus tonsillaris in which the tonsil develops. The unoccupied portion of this cleft above the tonsil is known as the supratonsillar fossa. The faucial tonsil arises by an invagination of the hypoblast in the sinus tonsillaris. The diverticulum thus formed subdivides forming the crypts, around which lymphoid tissue develops.

Plica Tonsillaris.—In early fetal life the anterior pillar extends backward covering the sinus tonsillaris. In this manner the tonsil may be more or less completely covered by this free border of the anterior pillar, which membrane is known as the plica tonsillaris or triangularis. This membrane is very marked at times and I recall cases in which the tonsil was almost hidden by this membranous fold (Figs. 1, 2, 3, 4). One case comes to mind in which only a small portion of the gland could be seen through an opening 6 mm. in diameter in this plica tonsillaris. Some authors consider this membrane pathologic when present and think it a hypertrophy of the edge of the anterior pillar.

The Supra-tonsillar Fossa.—The supra-tonsillar fossa is a triangular, conical space, with the base in and when normal allows of free exit into the pharynx. Its walls are formed by the anterior and posterior pillars, while the floor is formed by the superior surface of the tonsil. It varies in size in different throats and may vary from the fossa of the opposite side. It may extend down and external to the tonsil or up and outward into the soft palate. It is an important space from the fact that the superior tonsillar crypts empty into it and when the communication with the pharynx is imperfect we are liable to have a collection of caseous material retained in this cavity. This condition is the cause of quinsy in its different forms.

Pus, when once formed by decomposition of extruded material, may follow the line of least resistance and burrow up into the soft palate or down external to the tonsil forming an abscess, which may extend downward external to the tonsil and result in a glottic or subglottic abscess. In many cases the formation of abscess does not occur. The decomposed caseous material may produce a mild infection and the mass gradually extend until sinuses have been formed in the soft palate or down external to the tonsil itself. These sinuses may be simple or branching, as they burrow in different directions. After they are formed they act as catch-basins for material extruded from the tonsillar crypts and are a constant source of infection.

Palatal Pillars.—The anterior pillar is formed by the palato-glossus muscle, which is attached above to the aponeurosis of the velum and has its insertion in the tongue. It is a constrictor of the isthmus of the fauces and holds the tonsil back in place. The free edge is often persistent as was described. The pillar is often attached to the tonsil by inflammatory adhesions from repeated attacks of tonsillitis. The free border may be of considerable thickness, or it may be so thin as to be almost transparent. At times the anterior pillar is attached to the posterior pillar by adhesions or by means of the plica tonsillaris.

The posterior pillar is formed by the palato-pharyngeus muscle, which arises in the soft palate with fibers from its fellow of the opposite side. It passes partly above and partly below the levator palati and azygos uvulæ. After forming the posterior pillar of the fauces the internal fibers are inserted into the pharyngeal aponeurosis and the external fibers pass forward to be inserted into the posterior border of the thyroid cartilage. The action of this muscle is to contract the isthmus and help lift the soft palate.

Capsule.—The capsule is of no particular importance except that it is made up of thick connective tissue and surrounds the tonsil. From the capsule the trabeculæ are given off, which run to the inner surface of the gland.

The Crypts.—The crypts vary in number and length. In the upper half of the tonsil they are longer, usually extending to the capsule on the external surface of the gland. The crypts emptying below the middle of the gland are usually empty, while those in the superior half are nearly always full of cheesy material. This is especially true of the crypts which empty into the supratonsillar fossa. One crypt situated about the junction of the middle and upper third of the medial surface of

the gland, is often very large at its mouth. At times this has the appearance of a fissure across the gland and has given rise to the opinion that the part above the fissure was a separate tonsil but this is not true. At each act of deglutition the tonsils are squeezed by the palatal muscles and the superior constrictor. This empties them of secretion unless there is an obstruction at the mouth, in which case the material may be pushed farther into the crypt. The lining membrane of the crypt is of columnar cells while the surface of the gland is covered by squamous epithelium.

Blood Vessels.—The blood supply of the tonsils is derived from the tonsillar, a branch of the facial, the ascending pharyngeal, a branch of the external carotid; the dorsalis linguæ, from the lingual. These vessels enter the tonsil near its base. In hypertrophied tonsils, the tonsillar artery is often considerably enlarged and may make troublesome hemorrhage. The lingual branches cross from the base of the tongue to the lower part of the tonsil and may be somewhat prone to produce bleeding also.

Relation to Other Parts.—The tonsil is sometimes found in malposition. One case is reported in which the gland occupied a position under the Eustachian tube, behind the posterior pillar. In another case it hung well down over the larynx as a sessile growth. The tonsil is in relation in front, with the anterior pillar; behind, with the posterior pillar; internally, with the oropharynx; above, with the supra-tonsillar fossa; externally, with connective tissue, external to which lies the superior constrictor muscle. The pharyngo-maxillary space lies external and behind the tonsil. It is formed by the lateral wall of the pharynx, the internal pterygoid muscle and the upper cervical vertebræ. The tonsil corresponds to the anterior part of this space, which is filled with fat and connective tissue and contains the external and internal carotid arteries, the vagus and the hypoglossal nerves. The internal carotid is 1.5 c.m., and the external 2 c.m. from the gland.

The Eustachian Tube.—The Eustachian tube lies just above and a little behind the tonsil and in cases of hypertrophy of the tonsil upward and outward, it often extends along the course of the tube causing tubal irritation and tinnitis (Fig. 5).

Cervical Lymphatics.—The tonsil is in direct connection with the superficial and deep cervical chains of lymphatics. Lymph is carried from the tonsil to the submaxillary gland and then to other glands belonging to these chains. These chains are emptied into the jugular trunk, which with the subclavian trunk, are emptied into the thoracic duct, or direct into the vena cava. Lymphatic anastomoses between different glands of the same and with other chains are exceedingly numerous allowing an infection being carried differently at different times. It has been proven that the lymph current may flow in almost any direction through these anastomotic branches. If the current were constant, we would have an infection carried from the tonsil to the vena cava direct.

By a series of experiments it has been shown that there is an intimate relation between the cervical and bronchial chains, especially the peritracheobronchial, the intertracheobronchial, the interbronchial and the posterior intercostal chains. These gland chains communicate with the thoracic duct direct, but they also communicate with the cervical and subclavian glands by their anastomotic branches. Consequently, we can have an infection from the tonsil transmitted to the upper lobe of the lung direct.

AUTHOR'S RESEARCHES.

In 1903 I presented a paper[1] to this section on "Removal of the Faucial Tonsil" and demonstrated my method and instruments of operation. I had been studying pathologic findings of tonsils removed, both in regard to the mode of infection of the general system and the most likely part productive as an infective focus. The tonsils considered were not limited to any particular type, being specimens from patients presenting for treatment both in private and hospital practice, irrespective of symptoms observed, other than that the gland was diseased and it was deemed wise to remove it. Thus many cases were included in the list in which the patient complained of no symptoms ascribed to the tonsil itself. Had cases been selected with special care as to symptoms, the percentage would have reached a very high degree.

These observations were made in accord with similar observations by other authors, so that a true estimate might be arrived at in my locality. Care was exercised not to confuse secondary involvement, by infection from the patient himself, with primary infection of the gland.

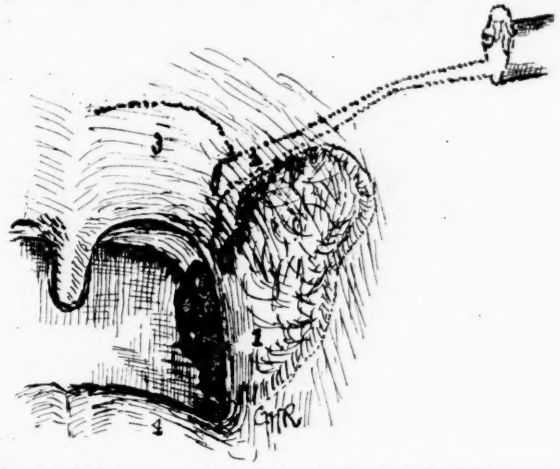

Fig. 5.—1. Tonsil. 2. Eustachian tube. 3. Postnasal space. 4. Tongue.

In no instance have I seen what Wood of Philadelphia has explained as a secondary tuberculosis of the tonsil. In nearly every case the cervical lymphatics gave evidence of some form of infection by being enlarged, but no mention will be made of any but the tuberculous lesions.

Diagnosis was made by means of microscopic slides and the simple presence of tubercle bacilli in crypts was not taken as sufficient evidence to call the case tuberculous. Microscopic tissue and cells which might be questioned were not accepted. Thus giant cells of syphilis, or chronic granulations, were not mistaken for tuberculous tissue with giant cells. I have thus endeavored so far as possible to be absolutely fair in my deductions that they might attain a position which would withstand the most searching investigation. In all cases the personal history was recorded as well as the subsequent deportment of the patient. In some a tuberculous family history was recorded with negative findings in the tonsil examined. In others of negative family history, tuberculous tissue changes could be demonstrated. We have long since realized that the tonsil

1. THE JOURNAL A. M. A., 1903, xli, p. 1334.

has the power of destroying micro-organisms by phagocytosis. When diseased, however, this power is either destroyed, or overcome by the presence of a greater amount of infecting material than can be destroyed. The gland becomes the lodging place of pathologic material by its detention in the crypt through some interference of expulsion by reason of some obstruction at the mouth of the crypt itself, or external to this.

It is common, therefore, to find masses deep in the crypt, while the part nearest the opening may be free from material. This occurs in different ways and is particularly liable to occur to crypts emptying into the supra-tonsillar fossa, from the fact that the tonsil is frequently hypertrophied extending upward and outward filling the supra-tonsillar fossa. The material is held in the crypt, by the hugging of the pillars over the top of the tonsil thereby shutting off the exit to the pharynx; by the crypts running nearly vertical which produces a tendency for the material to extend farther in by the squeezing of the tonsil by the palatal and superior constrictor muscles; and because the mouth of the crypt is often smaller than the rest of the crypt or being enlarged at the extremity causes less resistance in that direction.

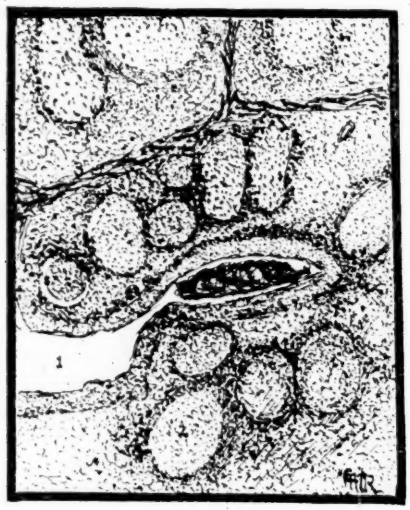

Fig. 6.—Cross section through crypt showing: 1. Crypt containing mass of caseous material. 2. Lymphoid tissue. 3. Trabeculæ.

This is especially true of the crypts covered by the plica tonsillaris.

The crypts which empty downward and inward are emptied of their contents by the action of these muscles, there being nothing to interfere with the patency of their mouths as they empty into the pharynx direct. These are shorter than the superior crypts, and it is common to find the upper ones extending as far as the capsule on the outer side of the tonsil. After the gland has become the seat of tuberculous infection it is easy to trace it from the tonsil to the cervical lymphatic chains, both superficial and deep.

We are thus able to trace in a direct way the route of infection through the cervical lymphatics to the lymphatics of the pleura. The apex of the lung is the most direct and this accounts for the great number of such infections shown by authors. I have been able to establish this route. It is not new that cervical lymphatics are infected from the tonsils. It is well recognized by surgeons to-day. In operating for the removal of tuberculous glands of the neck, the faucial tonsil is recognized as the infecting focus and therefore removed. This condition has been proven in clinical findings by others and myself. We know by the work of others, that patients with tuberculous glands of the neck, who are not operated on for their removal, develop lung tubercle to the extent of 75 per cent. as shown by Grober in an article of recent date. In cases which were operated on, he gives the following table of percentage which developed lung tuberculosis.

	Per cent.
Riedel, series 1	15
Riedel, series 2	12
Schnell	10
Frankel	10
Kirsch	14
von Noorden	25

In this table Grober does not state whether the surgeons who operated on these cases removed the infecting focus, the tonsil, or not. Possibly the per cent. might have been less had the gland been enucleated at the time of operation for the cervical adenitis. A tonsillotome operation would not be considered as a means of removal of the tonsil, as such is impossible by its use. I know many surgeons of this country who remove the cervical lymphatics disregarding the tonsil as the point of infection.

In nearly all these cases the operation is only tem-

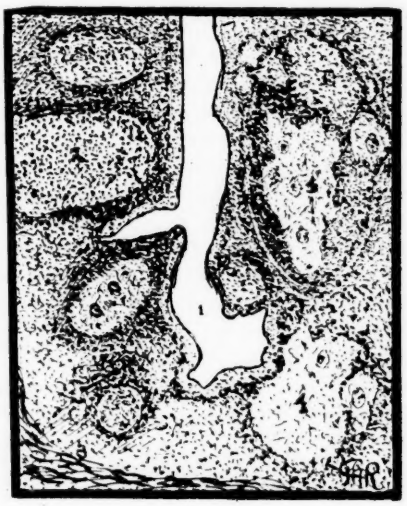

Fig. 7.—Cross section showing end of crypt. 1. Crypt. 2. Healthy lymphoid space. 3. Trabeculæ. 4. Tubercular areas showing epithelioid tissue with giant cells.

porarily beneficial, as other lymphatics enlarge subsequently from the fact that the infecting focus is left *in situ*. I have demonstrated this to surgeons many times in clinical observations. In my observations I have not recorded the ultimate infection of the lung for this paper but rather satisfied myself by giving the result of my observation as to the per cent. of tuberculous infection of the tonsil and the particular entrance of the infection into the gland. In all I have studied 232 cases operated on by me, taken without regard to symptoms by the patient. The greater number of tonsils were of the submerged type. Some cases had been operated on at a previous time by the tonsillotome method. I have found 8 per cent. of all the cases presented undoubted tuberculous lesions in the form of giant cells and tuberculous tissue change (Figs. 6, 7).

Much has been written concerning secondary infection of the tonsil by the lung by means of the patient infecting the gland when a lung tuberculosis existed, through the exhalation bringing the infection to the surface membrane of the tonsil. This seems far fetched. It is more plausible that most of the apex tuberculosis comes from a direct infection. We have a diseased crypt or

three or four of them, which have been full of cheesy material for months or years. The lining membrane of the crypt is weak as compared to the surface membrane of the tonsil. Is it not reasonable that we are very much more liable to an infection here than on the surface membrane? Again we have a different type of tuberculosis of the lung produced by direct infection. We have a localized tuberculosis in the apex of the lung which extends from this point to the rest of the lung. Tuberculosis of the lung from aspiration or blood infection, is more liable to be a general miliary tuberculosis.

What I desire to note more particularly is that about 8 per cent. of average cases have tuberculosis of the tonsil and that a large per cent. of these go on to develop tuberculosis of the lung. This infection is carried through the cervical lymphatics and by anastomotic branches direct to the lung. This occurs through the internal mammary, juxta-bronchial and peri-bronchial glands. I find cases in which there is a tuberculous infection of one tonsil and not of the other. I find a dull spot in the apex of the lung on the same side of the body as the infected tonsil. I find pus in a broken down lymphatic gland, usually the submaxillary, which is tubercular. I find other glands on the same side enlarged. Am I not justified in thinking this a direct infection? You may doubt. I have enucleated the tonsil, curetted the broken down gland and found an enlarged channel leading direct from the gland to the tonsil through which I passed a large probe. This was in a patient who had a dull spot in the apex of the lung, with subjective symptoms of tuberculosis, such as daily rise of temperature, rapid loss of flesh during a short time, night sweats and a hectic flush. After the operation on the tonsil and the submaxillary gland the patient regained the lost vitality. The enlarged glands disappeared, the fever subsided, the appetite and weight returned, the night sweats ceased and the dull area in the lung cleared up. Three years later the patient is in good health with no evidence of the dull spot in the lung. This is a typical picture of a class of which I have seen several, and I feel sure of this being a direct infection of the lung apex from a tuberculous infection of the tonsil. I have watched the cervical lymphatics become infected one by one and then removed the tonsil to witness the infected glands gradually disappear. Then by means of the slide I have found the tonsil tuberculous. (Fig. 7). There is no doubt but that the glands are able to destroy germs by their phagocytic property, but there is also no doubt that the infection can come until they become unable to compete with the great amount heaped on them.

The blood may introduce tubercle bacilli into the general system, having received it from the tonsil by means of the current carried through the jugular or subclavian trunks, either by way of the thoracic duct or direct to the vena cava. In this way we may have an infection carried to any part of the body and as a result have a tuberculosis of the mesentery or the knee-joint, the original infection coming from a crypt in the tonsil. The point of entry into the tonsil therefore is of great interest to us, as by its removal we may be the means of preventing this disease in 8 per cent. of cases. In studying the tonsil we know we can produce tuberculosis of the gland by inoculating the surface with strong cultures. At times the inoculation must be repeated often before the result obtains, showing that the germ is to some extent at least destroyed.

I have produced it through the surface membrane as is shown also by Wood in his experiments on pigs. If we study the section of the gland, however, we find the surface membrane much thicker than the lining membrane of the crypt. Therefore it would be more difficult to inoculate through the surface membrane than through the lining of the crypt. Again, if the surface membrane were the point of entry, we should find tuberculous changes here. This I have never seen in the slides examined. It has always been in the crypt. It was noted that the crypts which empty into the throat direct are seldom if ever affected. Those emptying below the middle of the gland were not affected in a single instance. The greater number of infections were from crypts emptying into the supra-tonsillar fossa. The part of the crypt affected is universally in its deeper extremity where giant cells are abundant in the tuberculous tissue. A few giant cells were at times noticed along the beginning of the crypt but in these sections they were less in number than in the deeper part of the crypt. The cells were found dispersed in the tissue as far as the trabeculæ which seemed to limit the spread of the tuberculous change.

I have not seen a trabecular area where the infection seemed to pass to it from the lymphoid space adjoining it. It is thus found that caseous material pushed to the extremity of the crypt furnishes the infective point of entrance into the tonsil. The crypt receives its infection in its deepest part and from this point is given to the lymphatic system. The crypts most constant in the production of infection, are those whose entrance is from the superior part of the gland. There are three or four which are constant enough to be classed as *the infecting crypts of the tonsil.* They are, one which empties just behind the anterior pillar near its margin, one just below the junction of the anterior and posterior pillars, one just in front of the posterior pillar on the top of the tonsil and one about the middle of the top of the tonsil all in the supra-tonsillar space. The reason of this is the obstruction to the opening of these crypts mentioned in the first part of this article. About 75 per cent. of the cases observed, developed from the crypts in the supra-tonsillar fossa. In two instances they were full of pus which, during enucleation, spurted out into the pharynx, showing chronic abscess of the tonsillar crypts.

In an article "Die Tonsillen als Eintrittspforten für Krankheitserreger, besonders für den Tuberkelbazillus," Grober gives the following table of cases operated on without regard to symptoms by the patient.

	Patients.	Per cent. Tuberculous.
Broca	100	0
Tanterzzi	26	0
Pfiffel	100	3
Gottstein	33	12
Lermoyer	32	6
Brindel	64	12.5
Plunder	32	18.9
Luzzattl	50	4
Brieger	78	6.4
Wesz	210	4.8
Dieulafoy	30	26
Total	760	6

These statistics are practically the same as my own 8 per cent.; and when we realize these facts, certain things become imperative in dealing with this gland. FIRST, and most important is that *the gland when diseased must be removed.* SECOND, *when operated on for removal, it must be enucleated completely.* THIRD, *pockets in the soft tissues around the tonsils must be destroyed.* In order to do this we must have some mode of operative procedure which will do more than is possible with operations by the tonsillotome. As small sub-

merged tonsils are more productive of tuberculous infection than large mass tonsils which hang well out into the throat, we must have some method by which the tonsillar fossa can be cleaned out completely.

TREATMENT AND TECHNIC.

Treatment of the gland by cleansing of crypts and attempts at shrinking the gland by astringents or the ignopuncture are not in keeping with our present knowledge and such practices should receive hearty condemnation. It is needless to say that every operator has his own method of enucleating this gland so it would be unwise to describe the various methods in vogue. To my mind the scissor method of the author meets all the requirements and is the most thorough method.

Scissor Operation.—The scissor operation is performed either under local or general anesthesia. When local anesthesia is desired, a 10 per cent. solution of cocain is used. When general narcosis is induced I prefer ethyl chlorid gas. To cocainize the gland, 10 per cent. cocain is introduced into the depth of the crypts by cotton pledgets. The surface of the gland is also painted, as are the palatal pillars. If deemed necessary, a 1 or 2 per cent. solution may be introduced into the gland hypodermatically.

After the parts are deadened, the gland is separated from the anterior pillar with the curved bistoury (Fig. 8). This is introduced above the tonsil and care is taken not to pass the point of the instrument into a crypt. When in the proper position it is just behind the pillar. Then by a dragging motion the pillar is separated. In cases in which the plica tonsillaris is persistent or there are adhesions between the tonsil and pillar, it is impossible to separate them with the curved bistoury. In these cases the pillar scissor (Fig. 9) is used by slipping one blade between the pillar and the tonsil while the other blade remains in the throat.

Thus we cut the tissues and where the free edge of the anterior pillar extends too far, it can be trimmed off, making the edge where it should be. After cutting with the pillar scissors, the bistoury is reintroduced to make sure the gland is free from the pillar. This is an important step in the operation. After the pillar is separated, the tonsil is grasped with the fixation forceps (Fig. 10). These are fitted on to the gland well up on the top and well down at the bottom. If we get the tonsil well fixed in the grasp of the forceps we can pull it inward and downward when we fit the tonsil scissors into place (Fig. 11). These are pushed against the pillars while the tonsil is dragged in and down. After it is well into the jaws of the scissors it is snipped out.

If we find the gland complete showing the capsule smooth and intact, we may feel sure the gland has been enucleated. If any doubt exist, a search should be made for fragments which, if found, are removed in a similar manner. In this way I have removed glands which had extended upward and outward under the Eustachian tube for a distance of 3 to 4 cm. Some of the advantages of this operation are, *a*, the ease with which the glands can be removed and the completeness of the enucleation; *b*, the freedom from wounding the greater vessels of the neck; *c*, the smooth cut surface of the wound; *d*, the absence of cicatrix after healing.

Fig. 8.—Double edged bistoury for separating anterior pillar from tonsil.

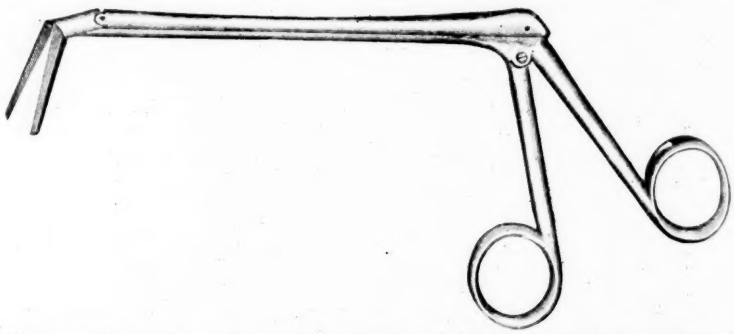

Fig. 9.—Pillar scissors for cutting adhesions between the anterior pillar and tonsil.

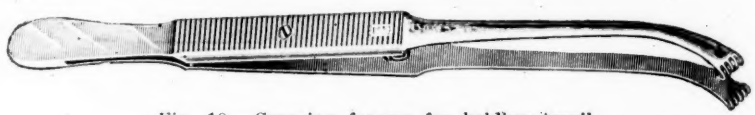

Fig. 10.—Grasping forceps for holding tonsil.

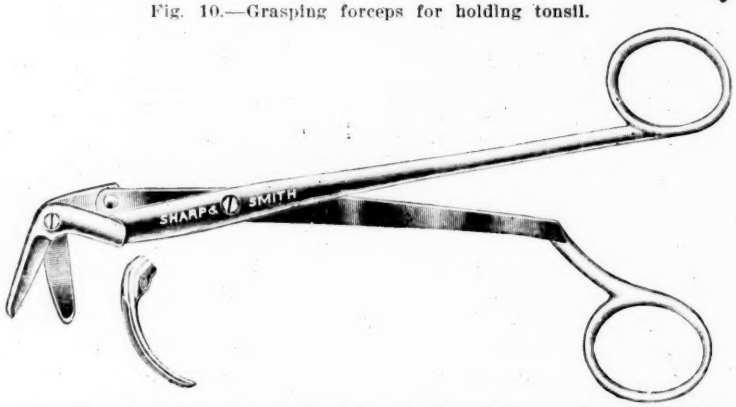

Fig. 11.—Tonsil scissors, made right and left and in two sizes, for adults and children.

ACCIDENTS DURING AND AFTER OPERATION.

Hemorrhage.—Hemorrhage is one thing feared by those who witness the operation of enucleation and I am constantly asked concerning it by students and physicians.

We may have a large tonsillar artery which may cause troublesome hemorrhage. If we remember that both the tonsillar and the dorsalis linguæ vessels enter the tonsil in its lower half, we get a good idea where to make pressure for hemorrhage. A gauze pack held in the throat for a few moments will usually control bleeding. The pressure is applied at the base of the tongue and outward. Should the tonsil be fibrous, it may be necessary to cut more of the base, as often a small stump may retain a small artery in its substance which being held open is not able to retract. In such cases the bleeding stops as soon as the fibrous tissue holding the vessel is removed. I have demonstrated this numerous times when the vessel was of size enough to cause spurting across the pharynx. General oozing may be controlled by a gargle of 50 per cent. dioxogen in cold water. Should the hemorrhage continue, the tonsil hemostat can be applied for a few hours. Usually patients who bleed very freely, faint, at which time the hemorrhage ceases, to return no more.

Some operators think they obtain benefit by the application of strong solutions of silver salts or turpentine, to the cut surfaces. There is a great difference in tonsils as regards bleeding. Of two glands which look alike we find the one will bleed profusely, while the other will bleed very little. This is probably because we remove all of the one and leave a small fibrous piece of the other. I am of the opinion that many of the so-called bleeders are of this type. When hemorrhage is excessive, salt infusions should be given.

Uvula.—Cutting off the soft palate is an accident which sometimes occurs but which with a little care can easily be avoided. It is liable to occur when the operator attempts the second tonsil while the throat is still filled with blood from the removal of the first tonsil. Should this occur, it does no harm aside from the cosmetic effect.

Losing the Tonsil.—The tonsil may pull off the grasping forceps and drop down over the larynx. This is a very alarming condition as it is difficult at times to grasp on account of the blood, and the patient fighting

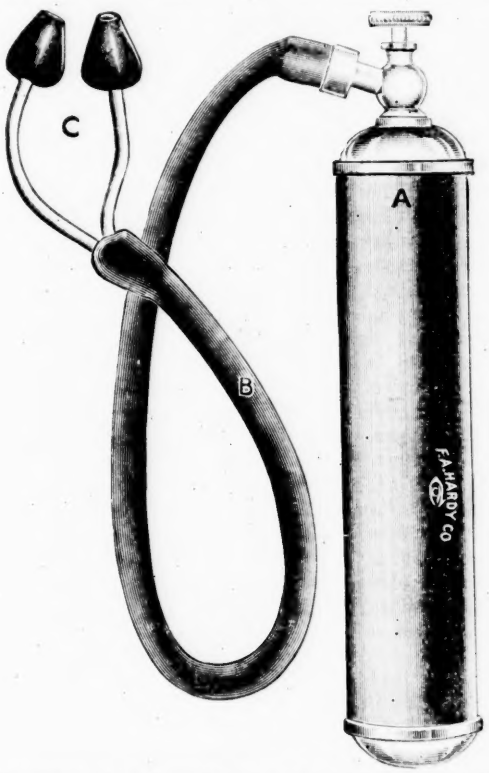

Fig. 12—Ethyl chlorid container with nasal tips for anesthesia.

for breath. This is avoided if the grasping forceps are provided with teeth which will hold after they are placed in position.

Wounding the Pillars.—Wounding the pillars is an accident which is often done and can be easily avoided with a little care. In doing an operation for adenoids subsequent to the tonsil operation, care must be taken not to introduce the curette into the sinus tonsillaris. I have seen mutilation of the posterior pillars from this mistake.

Anesthetic.—For the past eight months I have been using ethyl chlorid gas for tonsil operations. The liquid is held in a metal container and the warmth of the hand is sufficient to generate gas from it. I use the Gebauer inhaler for patients who are unable to breathe through the nose and after the patient is narcotized by the mouth I continue the gas through the nose piece. If the patient can breathe through the nose the inhaler may be dispensed with. By this means I can keep the patient under the influence of the gas for any length of time with safety. It is given either sitting or prone and I have seen but one case in which there were any but pleasing symptoms. The heart is not depressed, the patient is not cyanosed and recovery is made a moment or two after the administration is discontinued.

CONCLUSIONS.

1. Eight per cent. of all tonsils examined were affected with primary tuberculosis.
2. Tuberculous infection enters the tonsil through the crypts.
3. Those crypts emptying into the supra-tonsillar fossa furnish 75 per cent. of the cases of tuberculosis of the tonsil.
4. Infection takes place in the depth of the crypt.
5. Tonsils are the cause of general infection of the blood which may produce tuberculosis in any part of the body.
6. Direct infection of the apex of the lung from the tonsil.
7. Failure of operations for cervical adenitis unless the tonsil is removed.
8. The great number of patients developing lung tuberculosis when cervical glands are not operated on.
9. The per cent. of lung tuberculosis when glands of the neck were removed showing the operation on the tonsil as being insufficient to remove the infecting focus.
10. Resolution after tuberculous glands are removed.
11. Advantages of special instruments.
12. Some of the accidents which may occur during tonsillectomy.
13. A new method of administering gas for narcosis.

100 State Street.

DISCUSSION.

DR. J. W. FARLOW, Boston, said that thorough examination of the part of the tonsil situated behind the anterior pillar is of great importance, in order to find a possible source of infection. A dull wire curette passed into the crypts, the supratonsillar fossa and between the anterior pillar and the tonsil often brings to light foul, cheesy masses, which are the cause of trouble. It is also of great importance to notice the condition of the teeth, because bacteria from decayed roots may cause irritation of the cervical glands and keep up an enlargement of the tonsils. In removing the tonsils the guillotine is not sufficient in many cases and should be superseded or supplemented by instruments which can dig out the deeply situated crypts with their foul contents. At one time Dr. Farlow was of the opinion that in cases in which adenoid disease existed with moderately enlarged tonsils, removal of the adenoid would be followed by a shrinkage of the tonsils. But he has seen so many cases in which this was not true, the tonsils oftentimes enlarging even when the postnasal space was free, that he has come to the conclusion that it is best to take no chances, and has advised removal of the tonsils as well as of the adenoids.

DR. J. L. GOODALE, Boston, said that his own observation agreed with that of Dr. Robertson that the crypts are particularly a source of infection. With regard to the following of tuberculous tonsils and tuberculous glands of the neck by tuberculosis of the lungs, he said he was somewhat surprised at the large percentage of secondary effects which Dr. Robertson gave. In the Children's Hospital for 12 years Dr. Goodale has followed individual patients for at least four to six years, children who have come originally with tuberculous cervical adenitis, who have been in some instances operated in; others not, and he has not found these cases followed by pulmonary tuberculosis. That brings the possibility of two forms of tuberculous infection, namely, by the bacillus of bovine tuberculosis and the bacillus of human tuberculosis. Within two years he has had under observation seven cases of tuberculous

cervical adenitis in which he removed the tonsils. On clinical inspection the tonsils showed very little that was abnormal, but on microscopic examination tubercles and giant cells were found. The tonsils were inoculated into guinea-pigs, who died subsequently of tuberculosis. Cultures from four of these pigs have been kept under observation by Dr. Theobald Smith, who reports that they are cases of bovine tuberculosis. The bacteriology of the cases will be reported in detail shortly by Dr. Smith. This seems important, and there should be careful inspection of these cases. Dr. Goodale does not believe that a cervical adenitis of tuberculous nature can be removed by removal of the tonsils; the tubercle bacilli have already penetrated into the lymph glands. What should be done under these circumstances is the prevention of further penetration of more bacilli into the cervical lymph glands by extirpation of the tonsils and adenoid, but if they are already enlarged that will not necessarily alter the course of these glands. In many instances there is enlargement of the glands of a non-tuberculous nature in which removal of the tonsil brings relief to the glands. Dr. Goodale has a series of such cases of cervical adenitis in which the tonsils were removed, with disappearance of the adenitis, and in no instance did infection of the guinea-pig follow inoculation. Summing up, Dr. Goodale said that the more he finds enlargement of the tonsil with cheesy detritus associated with cervical adenitis, the more he is inclined to regard the adenitis of toxic origin by absorption from the tonsils; while the less he finds of pathologic alteration in the tonsils the more he is inclined to regard it as of tuberculous origin.

DR. A. H. ANDREWS, Chicago, said that there are a great many physicians who are reading with interest everything pertaining to tuberculosis; indeed, there is a wave of interest all over this country and the world on this subject, especially the prevention of tuberculosis. There is no more important subject, no subject which to greater advantage can be called to physicians' attention than tuberculosis coming from the tonsil. If the title of the paper were changed it would be read more widely and do more good than under its present title. From his own observation Dr. Andrews is satisfied that very many cases of pulmonary tuberculosis result from primary infection of the tonsil, a much larger percentage of cases than is ordinarily thought.

DR. F. B. SPRAGUE, Providence, R. I., said he believes a great many of the acute infectious diseases as well as tuberculosis find their way into the system through the lymphoid tissue of the throat as it does through the tonsil; also that infection from the teeth gets into the tonsils and into the lymph glands in the same way, thereby causing infection as Dr. Farlow said. Speaking of the relation of the tonsils to adenoids, Dr. Sprague said it always seemed that when he took out adenoids without taking out the tonsils, as he did early in his practice, the tonsils showed up more afterward than before because of the shrinking away of the tissues of the throat. Now he always takes out the tonsillar tissue at the time of the adenoid operation, and is surprised at the amount he gets out, judging from what was evident before the operation. With the small guillotine tonsillotome a lot of tissue can be caught in the instrument that had not seemed to be present. He has had a little different experience from Dr. Farlow in getting out tonsillar tissue, and rarely uses anything except the guillotine tonsillotome. With a small size, half inch and other sizes, he is able to clean the tonsil down to the fascia. This is easily and quickly done by using an instrument of this sort. It is very important to clean the supratonsillar fossa, because many ear cases are dependent on inflammation of the tissue in this region which, if not removed, prevent the ear disease from getting well.

DR. A. E. PRINCE, Springfield, Ill., said that he is convinced that a careful examination of the secretions which come out of the crypts of the tonsil relative to the discovery of their tuberculous nature, would have a great effect in convincing the patient and the family physician in regard to the efficiency of the surgeon's work and the seriousness of the case. There is a great deal of prejudice against the removal of the tonsils, and if the family physician and the patient think that tuberculosis is being studied in relation to the tonsils, laryngologists will do good to humanity.

DR. CULLEN F. WELTY, San Francisco, agreed thoroughly with the radical removal of the tonsil, including the capsule. He does not believe it can be done with the ordinary tonsillotome with the exception of a very few cases in which the pillars are only slightly adherent. In these cases material assistance is rendered by breaking up the adhesions, drawing the tonsil well into the tonsillotome, in fact, doing an enucleation. Dr. Weltey has done this repeatedly. All cases that are adherent to the pillars, however, must be removed in a different way. In a paper a short time ago he advocated practically the same as Dr. Robertson. At that time he came into possession of a publication by Lartigau of San Francisco regarding investigations along this line on adenoids, showing 15 per cent. of tuberculosis. This, added to the 8 per cent., makes a very formidable figure. This should be investigated very thoroughly, as it is amenable to treatment. Further, Dr. Welty believes that many cases of chronic rheumatism may be traced to a continuous infection from a diseased tonsil and that many acute cases of rheumatism are none other than a streptococcus infection by way of the tonsil. A short time since he observed a case of acute nephritis develop from a tonsillar infection.

DR. OTTO T. FREER, Chicago, was much pleased to note that the tonsillotome had no advocates in that assembly. It is prone to create prolonged bleeding from accidental wounds of the pillars of the fauces and it removes the tonsil incompletely, leaving so much of it behind that the remains form a hidden focus of disease permeated with ill-drained ends of follicles obstructed by the cicatricial contraction of the stump when healed. The tonsillotome is, therefore, an instrument that should be discarded by the skilled laryngologist and left to the general surgeon, for whom such mechanical means have to supply his lack of skill in laryngologic methods. In time the general medical public will begin to understand how dangerous an organ a hypertrophic or chronically inflamed tonsil is, infected, as it may be, by tubercle bacilli, and in the future its removal will be more readily agreed to than even now. The tonsil is, of course, only a small part of the vast adenoid expanse which covers the pharyngeal mucous membrane and base of the tongue. Into this broad layer of lymphoid tissue tubercle bacilli can enter anywhere, and removal of the tonsils alone will, of course, not make the patient immune to their entrance through other parts of the surface of the upper air passages. Nevertheless, as Dr. Roberston emphasized, the crypts occurring in the faucial and pharyngeal tonsils seem to be the most likely points for the invasion of the bacilli, and it seems, therefore, to be best radically to extirpate these glands when diseased.

DR. C. M. ROBERTSON, Chicago, said that there is much he could not say in his paper about the plica tonsillaris. He has drawings showing how the plicatonsillaris binds the tonsil down. Microscopic examination of the material that is thrown off from the tonsil will not show tubercle bacilli very often; they are not entering constantly, and repeated examinations might be made before getting any of these bacilli. In some cases in which the giant cells were most numerous in the section there were no bacilli in the crypt. When the process is chronic there is not a profound infection at any one time, but it is a slow low-grade infection. That explains why the cervical lymphatics may not be much enlarged. Of course, the more rapid and profound the infection the more prominent will become the glands infected, whereas there may be a more dangerous infection from a slow low-grade type in which the gland does not enlarge much, but the infection is getting in all the time. He has tried to demonstrate the presence of tubercle bacilli in the crypts, but has been able to do so only a couple of times. It is difficult to keep the tubercle bacilli after the specimens are taken out, as they soon disintegrate. Infection of the teeth he did not touch on in his paper. He did not mention where the infection could come from. He simply observed those cases in which infection comes from the tonsil.

Dietetics.—The study of rational dietetics is imperative for the physician who would succeed in the practice of medicine.—*Medical Times.*

THE ODOR AS A GUIDE IN THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.*

H. GRADLE, M.D.
CHICAGO.

In chronic suppuration of the middle ear the success or failure of conservative treatment can not often be predicted from the objective appearances at the first examination. Cases in which we can demonstrate caries, or necrosis or cholesteatoma or involvement of the mastoid cells can, as a rule, not be cured except by operation. But very often the existence of these lesions can only be suspected, not demonstrated.

Any sign, therefore, which enables us to test quickly the efficacy of conservative treatment should be recognized as a valuable guide. I have repeatedly pointed out what important lessons can be learned from the odor of the discharge in the course of treatment.[1] It seems to me important enough to revert to this subject in the light of further experience.

With scarcely an exception the discharge of chronic suppuration is characteristically fetid. It has been shown by bacteriologic research that this offensive decomposition of the pus is due to anaërobic bacilli. Clinical observation further shows that this decomposition of the discharge is an important factor in prolonging the disease. The putrefactive germs are readily dislodged when the source of suppuration is freely accessible. If, however, there are any sinuses or fistulas or spots protected by granulations, in short, any spaces in which the pus can not be reached, it is far more difficult or even impossible to remove the odor of the discharge.

METHODS OF COMBATING ODOR.

In practice I employ the odor test in the following way: In every case in which there are no urgent symptoms necessitating prompt operation, the ear is washed out until the water brings out no further discharge or debris, and boric acid powder is then blown in lightly. In successful cases the odor disappears permanently after one or at the most two to three treatments of this kind. At the next examination the pus wiped out with cotton is odorless.

This class of cases requires no operation. The larger number are cured by the continuance of this treatment in from one to three weeks. The disease is evidently of a superficial character. Yet I have positively known instances to react in the same favorable manner, in which small areas of caries of the tympanic walls could be demonstrated. A small proportion of these patients require a longer time for cure. Exceptionally a case is met with in which it seems almost impossible to remove a trace of mucous discharge, although by some variations of the treatment (nitrate of silver or tannin in glycerin) success is usually obtained in the end. There is no reason to assume that in this class of cases an operation would prove of any benefit. The occasional relapses met with are clearly re-infections from the throat.

When irrigation followed by boric acid fails to remove the odor in the course of a few days, nothing can be gained by continuing the same treatment. Intratympanic irrigation through a very slender curved canula will sometimes succeed, though not very often, in dislodging pent-up pus or retained epidermis scales, whereupon the odor disappears, and the now accessible source of suppuration heals. Even less frequently than from intratympanic washing I have seen the same success attained by instillations of a mixture of alcohol and ether followed by 10 per cent. carbolated glycerin. Whenever the odor can be removed by these measures, healing usually follows promptly.

In a certain number of instances the suppurating source is so inaccessible that these different therapeutic measures fail to remove the odor of decomposition. On the basis of a long experience I must say positively that the continuance of the different forms of treatment so far mentioned proves absolutely useless if they fail to remove the odor promptly. The only conservative treatment which in my hands has been able to influence and cure a proportion of these patients is careful tamponing with gauze. If this is not properly done it fails, even in suitable cases. After proper cleansing a narrow strip of good absorbent gauze should be pushed into actual contact with the source of the pus as far as it is visible. The efficiency of the drainage thus created depends on the dryness of the gauze and hence on its frequent replacement. Drainage by gauze tampon does not remove the odor directly. Slowly the discharge lessens. It takes never less than 3 weeks, sometimes over 6 weeks, until the gauze remains dry. In some instances the odor persists until there is absolutely no secretion. In others the discharge may finally become odorless when it has been reduced to a minimum, when suppuration often ends within a few days.

RESULTS.

Treatment by gauze drainage ends either in a complete cure (in about 50 per cent. of the cases), a partial cure (33 1/3 per cent.) or failure (16 per cent.).

If when properly done tamponing does not distinctly lessen the discharge in about 3 weeks at the most and continue to diminish it progressively, no ultimate benefit can be expected. These patients can only be cured by operation. On the other hand, in the most favorable cases the gauze will ultimately be found dry, no matter how long it is kept in the ear.

Most of the cures thus obtained I have found to be permanent. But still relapses occur oftener than in those patients whose odor is at once stopped by irrigation. As a partial cure I would record those instances in which gauze drainage removes the odor in the course of a few weeks, but fails to end the suppurative process completely. A trace of discharge continues, but often such a minute trace that it would not be detected except by the tiny moist spot on the tampon.

Some of these patients get well by long continuance of the same treatment, but relapses are very common. Others present the same trace of discharge for months and years while under treatment. If treatment is discontinued they do not get subjectively worse, but the discharge increases slightly and may again become fetid when neglected. In an experience extending over many years with many dozens of cases of this description I have never known any to suffer from any consequences or aggravations. I feel reluctant, therefore, to urge a radical operation in these cases of partial success. My own experience, fairly large, suggests that when the odor is permanently removed in chronic suppuration the disease has lost its progressive and hence dangerous character.

* Thesis for admission to the American Laryngological, Rhinological and Otological Society.

1. Arch. Otology, xxi, p. 110; also "Diseases of the Nose, Pharynx and Ear," 1902, p. 494, *et seq.*

The patient has then to choose between the danger of a radical operation and the necessity of more or less indefinitely continued treatment which many people can learn to carry out themselves.

CONSTITUTIONAL LOW ARTERIAL TENSION IN CHILDREN.*

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One of the most interesting problems occupying our attention of late years has been that of arterial tension in relation to circulatory disease. While the greater number of conditions fall, we believe, without difficulty into our classification into three cardinal groups, still there are certain outside cases which it is necessary to consider. One of these is "Constitutional Low Arterial Tension," and that is the topic we have chosen to present to this section under the title of this paper.

The cardinal groups, which as a matter of clinical experience we have come to recognize are:

1. Primary low arterial tension, covering all cases in which the tension in the arteries is abnormally low on account of valvular disease, myocardial disease, or secondary to some general weakening condition.

2. High arterial tension, in which is found an abnormally increased tension in the arteries due to some condition of the system demanding it. This is found as a result of degenerative disease of the blood vessels, or kidneys, nervous strain, or toxemia, causing disorderly action of the vessels.

3. Secondary low arterial tension, in which there is a failure of the circulation secondary to an exhaustion of the circulatory apparatus as a result of an over demand for pressure.

The relation of anemia and congestion to disease is always a question of much interest, but it is one the importance of which is invariably exaggerated by amateur therapeutists. Often enough the local circulation is influenced by the local condition and not the reverse. The effect of acute congestion or anemia is very different from that of chronic congestion or anemia. Much depends on the establishment of the toleration of a condition. The individuality of the subject is always considered by the clinician, and individuals are classified consciously or unconsciously into groups. One of these groups is composed of those children who are suffering from constitutional low arterial tension, a condition which probably has its origin in the nervous system, though the symptoms are circulatory.

Young people with this defect present habitually a very low arterial tension. The pulse is such that if found in other individuals it would suggest the prostration of acute or chronic disease. The condition is habitual. There is no heart lesion; there are no cardiac symptoms, such as shortness of breath, or dropsy, and the kidneys present no abnormality of function. The defect seems to be in the peripheral circulation, due to a vasomotor relaxation which fails to produce the back pressure on the arterial system that is necessary for a normal tension, and a proper cardiac stimulation. In other words, the blood circulates too easily, though badly. To differentiate such a case from a case of cardiac weakness it is only necessary to make a demand on the circulation by active exercise, or to observe the response in the case of acute disease.

Such children suffer much discomfort from lack of circulation, as by cold feet, depression, constipation, and skin disorders. They are particularly liable to catarrhal disease and functional nervous disorders. Sometimes they are subject to fainting attacks. They thrive on active exercise and the stimulation of excitement, and indeed every mental and physical activity which stimulates the circulation. A brisk horseback ride is to them like a dose of medicine. Very hot bathing of short duration benefits them, while they but seldom respond to cold bathing.

The group of children included in the group of constitutional low arterial tension, though not a large one, will still present instances in the experience of every pediatrist. The importance of recognizing the condition is that it may be placed where it belongs in the category of constitutional conditions and not treated as an accompaniment of a supposed anemia, or cardiac disease, or as the constitutional effect of some local disease. It is a condition that must be met by a proper regimen and one which has a tendency to improve and even diseappear after adolescence.

The recognition of a patient as belonging to this class removes much unnecessary anxiety from the family physician, but he must not fall into the error of confounding it with primary or secondary low arterial tension. The former has for its basis a true failure of the integrity of the circulatory apparatus which results in an inability to respond to demands for pressure, and the latter represents an exhaustion due to the exorbitant demands of prolonged high arterial tension. Secondary low arterial tension is rare in childhood. I commend to students of the circulation the careful observation of this class of cases.

54 West Fifty-fifth Street.

DISCUSSION.

DR. ARTHUR W. FAIRBANKS, Boston, referred to a case which puzzled him considerably; a child about a year old was brought into a babies' hospital with enteritis. The enteritis improved very much, but the child became cyanotic. The extremities and the whole body became more or less blue, but limbs, hands and feet were warm. The pulse was only 80 and remained at that rate practically without variation until the child's death. A postmortem could not be secured. He considered it a vasomotor palsy. He thought possibly Dr. Bishop could explain the condition.

DR. L. F. BISHOP, New York City, did not know exactly how to explain the case mentioned by Dr. Fairbanks. These mysterious cases are seen in the hospitals, in those dying from different causes. They seem often to be due simply to loss of vitality, but other cases of cyanosis of the extremities are often peculiarly obscure. They are evidently due to some toxic condition in the blood or else they are due to some nervous influence. In fatal cases there has seemed to him to have often been some intra-abdominal disease. He has noted it in a fatal case of appendicitis. Cases of constitutionally low arterial tension are not very common and the condition is usually a chronic one. They are apt to come under the observation of a number of people and the impression is made that they are more frequent than they really are. The blood pressure is chronically low, and yet it is low, because these particular children do not seem to need a higher tension. His observations have not been made in very young children. There are indeed, as one of the speakers has implied, many cases, particularly of cardiac disease and in renal disease in which by the finger the impression is conveyed that the tension is low and yet actual examination by the pressure gauge shows that the tension is high. In the cases mentioned in the paper accurate measurements showed the tension was low.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Clinical Notes

A CASE OF RENAL TUBERCULOSIS.

JOHN C. SPENCER, M. D.
SAN FRANCISCO.

Patient.—F. M., male, aged 33, carpenter, native of the United States.

Family History.—The cause of the father's death is unknown, although he lived to an advanced age. Mother died of mammary cancer. One brother died from pulmonary tuberculosis.

Personal History.—The patient had gonorrhea in early youth. About twelve years ago he had apparently a first attack of appendicitis. Symptoms continued for about five days and then subsided. The patient has always been rather susceptible to "colds," with a vague history of having had one or two very persistent attacks. Six years ago he had a pleurisy with effusion, which necessitated my removing about 500 c.c. of clear fluid from the left pleural sac. Convalescence was uneventful. About four years ago I operated on him for perityphlitic abscess caused by ruptured and partly gangrenous appendix. During the first week fragments of a fecal concretion about the size and shape of a date pit were washed out in irrigating the wound. Aside from this, convalescence was uneventful.

Present Illness.—His general health after this was very good until about two years ago, when some hernial protrusion developed at the site of the abdominal scar. Coincidently, he began to have symptoms of intestinal obstruction, as shown by dyspeptic symptoms, large accumulations of gas in the intestines, and obstinate constipation, only relieved temporarily by purgatives and enemas. The chief center of disturbance seemed to be definitely localized in the left hypochondrium.

Operation.—He sought my advice in August, 1905. After examination and consultation with Dr. W. I. Terry, it was decided that some band-like structure was the cause of his obstructive symptoms. In September, assisted by Dr. Terry, I reopened the abdomen at the site of the scar. A number of dense adhesions between coils of intestine and the abdominal parietes were separated. A velamentous falciform band started from about the umbilicus, seemingly connected at its upper part with the urachus. This band passed along the parietal peritoneum downward, outward and backward and toward the left, to the brim of the true pelvis. I followed this to about the region of the sacro-iliac synchondrosis, where it merged into the peritoneum and subperitoneal connective tissue. This band was excised. The abdominal wound was closed in tiers and healed normally. During convalescence, irritability of the bladder, from which he had suffered temporarily about six months before, reappeared. Boric acid irrigations were ordered, but the patient complained bitterly of the pain and discomfort they caused. The urine was turbid and contained a moderate amount of pus, and bladder epithelia, but no blood or other abnormalities.

Postoperative History.—Patient left the hospital in about three weeks, but failed to gain strength or flesh, and was unable to work. He received various tonics and roborants, but declined steadily in general health. In the meantime his bladder was almost constantly under treatment. I observed that any attempt at irrigation with silver nitrate solutions of from 1 up to 15—to 10,000, was invariably followed by a very intense symptomatic reaction. The conclusion began to force itself on me that I was dealing with a tuberculous cystitis. Consequently I determined to make a cystoscopic examination under cocain anesthesia. This excited such an intense bladder spasm that a cystoscopic examination was rendered impossible. Owing to the intense pain and severe reaction, and his enfeebled condition, he positively refused any further attempts at examination of the bladder. A specimen of urine from the bladder was collected by catheter, *secundem artem;* it was centrifugated and the sediment examined for tubercle bacilli in vain. Shortly after this the man began to walk bent slightly forward and to the right. This attitude, his progressive marasmus, with daily rise of temperature, forced on me the conclusion that the trouble was in all probability a tuberculous pyelo-nephritis, affecting the right kidney. Examining him in conjunction with Dr. Terry we found the right kidney somewhat ectopic, and sensitive to pressure. The left kidney was barely palpable, and not especially sensitive.

Second Operation.—A nephrotomy with a possible nephrectomy was determined on by us, and agreed to by the patient. On February 21, at St. Mary's Hospital, I delivered the right kidney through a Simon lumbar incision. The kidney appeared to be about one-quarter larger than normal. This, with its general appearance, determined me to do a nephrectomy without a perliminary exploratory incision. The operation offered no unusual features. The vessels were tied separately; the mucosa of the ureter presented a few fairly well-defined hemorrhagic areas. I stitched the upper end of the ureter into the lower angle of the wound. In 24 hours the ureter stitches had cut through and the ureter undiscoverably retracted. The suture ends from the vessels were brought out at the upper angle and the wound closed by through and through silk-worm gut sutures, supplemented by catgut sutures.

Termination of Case.—The temperature dropped to normal the following day, and did not rise again. For the first week after the operation the amount of urine excreted almost equaled the amount of fluid ingested, the difference being about 100 c.c. The man drank distilled water exclusively.

From the end of the first week his condition became progressively worse, with moderate uremic symptoms directed chiefly to his stomach. At the end of ten days the external wound became infected and was freely reopened at the upper and lower ends. The urine became more scanty in amount and at times bloody. Occasionally there was some tenesmus. Exactly four weeks from the operation the patient died, the sensorium remaining clear to the end.

Report on Exsected Kidney.—(By A. J. Lartigau, M.D.) The center of the exsected kidney contained a number of yellowish areas about the size of a pinhead, which proved to be tuberculous.

Postmortem.—Postmortem examination showed evidences of old tuberculosis at both apices, adhesion to the parietal pleura and miliary tuberculosis of the lower lobes of both lungs. The left kidney and ureter, the left lobe of the prostate, the left epididymis and the vasa deferentia and seminal vesicles showed advanced tubercular lesions. The brain was not examined.

SUMMARY.

An adult with a poor family history, evidently passed through a pulmonary tuberculosis at some time during his earlier years, the process undoubtedly terminating spontaneously. Then followed a period of reasonably good health, broken by an acute pleuritis with effusion and culminating in an acute appendiceal outbreak necessitating operative interference. During the next four years he had only moderately good health. Then a second celiotomy was performed, followed by rapid decline in general health, and development of symptoms of apparent tuberculosis of the urinary bladder. Two months before death there were strongly marked symptoms of renal tuberculosis.

The diagnosis of bladder tuberculosis was only possible, inferentially, from the symptoms, and was confirmed in a measure by the man's intolerance of silver nitrate solutions. The only positive diagnostic means—cystoscopy—was unsuccessful, at the single attempt, and impossible of repetition. A guinea-pig test was not tried, but in the face of so many corroborating factors, it may be regarded as a superfluous diagnostic refinement, in this case. The symptoms pointing toward renal tuberculosis seemed to point so positively to the right kidney, that not finding this one affected at the time of the nephrectomy, was a source of unqualified surprise. Furthermore, the failure to discover the gross lesions at that time, on sagittal section, reveals the inefficiency of a nephrotomy as a diagnostic precaution preliminary to

a nephrectomy. Nothing short of multiple sectioning of this kidney would have revealed the presence of the microscopic lesions found by A. J. Lartigau, M. D.

The course of the tuberculous process in this individual is a matter of some speculative interest.

The possibility of the original or secondary appendiceal attacks being of tuberculous origin can not be excluded. The healed pulmonary lesions certainly antedated the first attack.

It would seem that the tuberculous process remained in abeyance—probably encysted in the lung apices—and received a fresh impetus through the lessening of the patient's resistance, consequent on the long period of obstructive bowel disturbance, terminating in the last celiotomy. It would appear further that the fresh outbreak originated below the diaphragm, either in the pericecal region or else directly in the left kidney. The manifestations were most marked at first in the bladder. The tuberculous process extended down the left ureter and thence ascended the right ureter to the right kidney. The extensive involvement of the left kidney would make it seem most likely that the peritoneum over fundus of the bladder became involved through the lymphatic channels. A similar theory may explain the involvement of the genital adnexa.

836 Turk Street.

A CASE OF PEMPHIGUS LIMITED TO THE MUCOUS MEMBRANES.*

EDMUND M. COCKS, M.D.
NEW YORK CITY.

My object in presenting the history of a fatal case of pemphigus limited to the mucous membranes is to bring before you a case seen almost from its incipiency to a few days prior to the patient's death, a dermatosis so rare that its existence has been denied by a majority of dermatologists, Brock and Bernier claiming to have seen but four cases.

History.—Mrs. B., aged 37, a thin, nervous woman, the mother of five living children, was born at Pittsburg, Pa., of German parents. She had the usual diseases of childhood and developed into a strong, healthy woman. She married at the age of 24. Her health commenced to deteriorate after a miscarriage due to overlifting.

One year previous to the illness under consideration, Feb. 15, 1904, she experienced her first chill, which lasted two hours. Later in the day she menstruated. A year later she had a second chill lasting the same length of time. The following morning on account of the swollen condition of the tongue, she was unable to talk, and swallowed food with great pain and difficulty. Numerous pea-size vesicles were to be seen on the tongue, buccal mucous membrane, pharynx and lips. This condition persisted for two weeks, the older vesicles rupturing, swelling and subsiding. Deglutition became less painful.

The date of her next menstruation was ushered in by a severe chill, followed by a repetition of the first attack, which ran a like course. The third was similar to the two previous attacks, also the fourth, but the menses did not appear the following month.

Up to the seventh month of her pregnancy each was a duplicate of the previous month, the patient becoming more and more discouraged and emaciated. The two weeks preceding the seventh month of her pregnancy she was very comfortable but, she painfully remarked, January 14 was a banner day. The chill lasted three hours, with a slight remission.

Examination.—I saw her the following day; there was not a pea-size space of tongue, lips, buccal mucous membrane, pharynx or nasopharynx that was not the site of vesicles. There were several vesicles on the conjunctivæ. In the vagina were several bullæ; cervix was free. The rectoscope revealed vesicles as far as could be seen.

Treatment.—Lancing the vesicles of the mouth and touching their bases with an aqueous solution of methylene blue, 20 grains to the ounce, gave the patient considerable relief. Those of the vagina and nasopharynx were not incised but ruptured within three or four days. Small painful ulcerations resulted which did not heal for several days. Although at no time during her pregnancy was she free, by opening the vesicles as soon as they appeared, a fair degree of comfort and health was maintained.

Her food consisted of milk, to which cream had been added, eggs and concentrated liquid food. She gained slightly in weight until the fatal attack. She was seen almost daily and arsenic was prescribed and pushed from the first. All known local remedies were tried but methylene blue gave the greatest relief.

Further History.—The eighth month was no exception to the rule. The ninth month was ushered in by a chill and in a few hours the patient's tongue was so swollen that at the height of her labor she could not cry out for pain, or laugh for joy at its termination. Two weeks after her confinement she commenced to gain rapidly and we were all hopeful, though I had given my opinion that the pregnancy was not an etiologic factor. This quiescent period lasted three months then a return of all the symptoms, persistent vomiting and uncontrollable diarrhea greatly aggravated the patient's condition and rapid emaciation and death followed in one week. At no time was there a cutaneous symptom of any kind.

Historical Report.—During the height of an attack the contents of a vesicle situated on the tongue were aseptically drawn into a pipette and proved to be sterile. The contents of a flabby vesicle or one several days old showed numerous staphylococci. The blood at this time showed a leucocytosis of about 10 per cent. Between the attacks the blood was normal. The urine, examined numerous times, showed nothing abnormal but indican, which was present in a greater or less quantity during her entire sickness.

Postmortem Findings 24 Hours After Death.—Vesicles occluded the nares, they were also present in great number in mouth, on tongue, pharynx and esophagus. The mucous membrane of the stomach was also affected, the intestinal track from pylorus to anus was involved. The vesicles of the intestines were flatter and in some places where they had ruptured, ulceration to the muscular coat had taken place.

There were a few disseminated vesicles on the serous surface of the liver, spleen, intestines and pleura.

This case seems to have been one of pemphigus limited to the mucous membranes, probably due to indican, the result of intestinal fermentation, for which her family physician had treated her for several years, her pregnancy having had little, if anything, to do with her condition, in spite of the fact that her symptoms were worse at her menstrual periods preceding her pregnancy and at the time she would have menstruated if not pregnant.

DISCUSSION.

DR. WILLIAM S. GOTTHEIL, New York City, said that in his clinical work, on the lower east side of New York City pemphigus is a comparatively common affection. There are always two or three such cases in the City Hospital, and the same is true of the Lebanon Hospital. In two patients recently under his care the lesions were restricted to the mouth for a long time. One of these patients had been referred to him as presenting a case of syphilis, and his own diagnosis at the time was mercurial stomatitis. It proved to be a case of pemphigus, affecting first the mouth and later the cutaneous surfaces, and finally proved fatal. Dr. Gottheil said that he has never seen pemphigus limited to the mucous and serous membranes end fatally, as in the case reported by Dr. Cocks.

DR. L. DUNCAN BULKLEY, New York City, said he could cor-

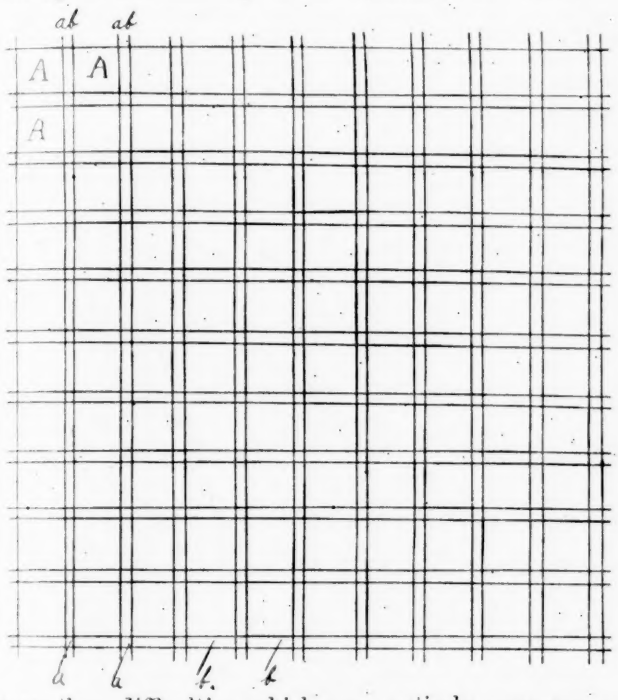
* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

roborate Dr. Gottheil's statement in regard to the frequency with which pemphigus occurs in certain sections of New York City, especially on the lower east side. At the New York Skin and Cancer Hospital, cases of this disease are comparatively common and they almost invariably come from that district.

A NEW COUNTING CHAMBER FOR THE ENUMERATION OF BLOOD CORPUSCLES.

CHARLES E. SIMON, M.D.
Professor of Clinical Diagnosis at the Baltimore Medical College.
BALTIMORE.

Every worker in the clinical laboratory, no doubt, has felt that in the construction of the hemomytometric slide undue prominence is given to the ruling for the enumeration of the red corpuscles, while as a matter of fact the leucocyte count is made much more frequently than the red count. In teaching, also, the red lines prove confusing to the beginner, and the patience of the instructor is often severely taxed in explaining again and again the meaning of the various lines. To overcome these difficulties, which seem entirely unnecessary, I have had E. Leitz & Co. construct a counting slide which is much simpler than any other with which I am acquainted. It will be found especially convenient in the enumeration of the leucocytes, but may also be utilized in counting the red cells. Its description and directions for use follow:



DESCRIPTION.

The instrument, as placed on the market, consists of the two ordinary diluting pipettes, and the counting chamber. The latter is ruled into 100 large squares (A, A, A), each occupying an area of .04 sq. mm. They are separated from one another by double guiding lines (ab, ab), with an intervening distance of .05 mm. Where the horizontal and vertical lines intersect, small squares (a, a, a) result, 100 in number, which accordingly have an area of .0025 sq. mm. each. The large squares are thus bounded by rectangles (b, b), measuring .05 mm. in width by .02 mm. in length, representing an area of .01 sq. mm.

As the little platform (P), carrying the ruling is exactly .01 mm. lower than the outside glass plate (D), each large square represents the base of a cube, the contents of which are .04×.01=.004 cb. mm.; each small square similarly corresponds to .00025×.01=.000025 cb. mm., and each rectangle to .001×.01=.0001 cb. mm.

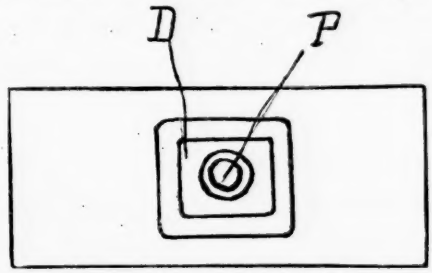
METHOD.

1. *Enumeration of Leucocytes.*—A drop of blood, diluted in the 1:10 pipette, with a 1 per cent. solution of glacial acetic acid, containing a small amount of gentian violet, is mounted in the usual manner and placed under the microscope. Starting with the top row of large squares at the left corner the total number of leucocytes in the 100 large squares is carefully counted. This number, divided by 100, gives the average number of leucocytes for one large square. As the cubic contents of each large square are .004 cb. mm. it is only necessary to multiply the number of leucocytes in one square by 250 in order to find the number of 1 cb. mm. of diluted blood, and thus by the degree of dilution, to find the number for 1 cb. mm. of non-diluted blood.

Example: Total number of leucocytes counted in the 100 large squares = 400; hence 4 = number for one large square, i. e., for .004 cb. mm. of diluted blood; 250×4 = 1,000 is hence the number in 1 cb. mm. of diluted blood and 1,000×10 = the number in 1 cb. mm. of non-diluted blood.

2. *Enumeration of Red Cells.*—The blood is diluted with Toison's solution or a similar diluent in the 1:100 pipette, and a drop mounted as usual. All the red cells are then counted, in the 100 small squares if no marked degree of anemia exists, or in the 40 rectangles if there is evidence of a distinct oligocythemia. The calculation is made as follows, bearing in mind the cubic contents corresponding to the small squares and the rectangles, viz., .00025 and .001 cb. mm. respectively.

Example: Number of red cells in 100 small squares equals



1,000; in one, therefore, 10, viz., in .00025 cb. mm.; in 1 cb. mm. of diluted blood 4,000×10 = 40,000, and in 1 cb. mm. of non-diluted blood 40,000×100 = 4,000,000.

Example 2: Number of red cells in 40 rectangles equals 800; in one rectangle therefore 20, i. e. in .001 cb. mm.; in 1 cb. mm. of diluted blood, hence 20 × 1,000 = 20,000, and in 1 cb. mm. of non-diluted blood 20,000 × 100 = 2,000,000.

If for any reason a larger area is to be counted for red cells this can, of course, be readily done by going over a larger number of rectangles, or by combining small squares and rectangles, due allowance being made, of course, for the cubic contents of the ground covered.

TRANSPOSED HEART.

ANOMALY REVEALED BY BULLET WOUND THROUGH NORMAL LOCATION.

JAMES A. ROLLS, M.D.
WATROUS, N. M.

The following unusual case occurred recently in my practice:

Patient.—A boy, aged 16, was shot in the left breast.

Examination.—I found the patient with a rapid pulse of fairly good quality, showing moderate signs of shock, with a bullet wound over the fifth rib, on the left side, 1½ inches inside the mammary line. An hour previously a friend, in handing to him a 22-caliber rifle, had accidentally discharged it when the muzzle was almost touching his breast, and directed slightly outward and upward. It seemed that the heart could not have escaped.

No apex beat was visible, and to my surprise none could be felt, nor could any sound be heard in the usual locality. Percussion gave moderately dull note at the fifth rib, passing into dulness lower down and continuing the costal margin.

Examination of the right side cleared up the anomaly, as there was no sign there of the usual liver dulness, while the apex beat was easily found in the fifth space, one-half inch inside the mammary line. The spleen was located within the usual limits, but on the right side. Percussion and auscultation of the apices did not encourage the belief that the lungs were transposed.

The boy made an uneventful recovery.

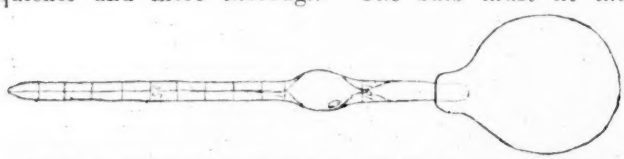
Cases of transposed viscera are uncommon, but one in which the conservation of life is dependent on this condition is possibly unique.

METHOD OF CLEANSING BLOOD PIPETTES.

M. BENMOSCHE, M.D.
WASHINGTON, D. C.

The following simple method is submitted with the hope that it may be of service to others doing blood work, as it has been to me.

Thoroughly cleansing the capillary pipettes after use is a very important feature in blood work. The usual method of blowing through a rubber tube is very trying to the buccal muscles. The use of an ordinary camera bulb, rubber being more pliable and durable, solved the problem. Expulsion of the contents, cleaning and suction of the ethereal vapor by this means is much easier, quicker and more thorough. The bulb must fit the



Use of an ordinary camera bulb in cleaning the capillary tubes of the Thoma-Zeiss Blutkörperzahl apparat.

tube (pipette) snugly. Usually rubber tubing is connected with the camera bulb. This must be removed, using merely the bulb.

I have found this method very convenient, particularly in the expulsion of the contents from the red-diluting pipette. I am also able to regulate the drop for the counting slide much better than with the regular tubing.

2511 Seventeenth Street N.W.

APPENDECTOMY THROUGH THE OPERATIVE WOUND FOR THE RADICAL CURE OF RIGHT INGUINAL HERNIA.

JOHN A. WYETH, M.D.
Professor of Surgery at the New York Polyclinic Medical School and Hospital.
NEW YORK.

Four times within the last fifteen months, in operations for the radical cure of oblique inguinal hernia of the right side, the cecum and appendix were involved, and in these the appendix was removed. These cases presented no difficulty, so far as the appendectomy was concerned, for the reason that this organ had descended into the hernial sac.

History.—On Oct. 7, 1906, I operated on a man suffering with a right oblique inguinal hernia, who also gave a history of three well-marked attacks of appendicitis of the relapsing type. I advised him to have this organ removed at the same operation in which the radical cure of the hernia was undertaken, as there were at this time no symptoms of disturbance about the appendix.

Description of Operation.—Through the usual incision for the Bassini operation the sac was opened and a loop of small intestine returned to the abdominal cavity. By means of the index finger, introduced through the neck of the sac, the cecum and appendix were felt about as far above the normal position of the internal ring as the finger could reach. By careful dissection with the finger tip, the cecum and appendix were gradually loosened from their anchorage and brought far enough down to permit me, by the aid of strong upward traction on the arched border of the conjoined tendon, to tie off the meso-appendix with catgut and the appendix with the silk ligature one-quarter of an inch from its origin. The stump of the appendix was cauterized with pure carbolic acid applied by means of a wisp of cotton twisted on the end of a small probe. A drop of alcohol was added to neutralize any excess of carbolic acid. The cecum and stump were allowed to resume their normal position and the hernial operation was completed after the technic I advise, namely, the treatment of the sac after the method of Macewen; the plastic work after Bassini; the treatment of the spermatic cord after the method of Halsted.

The patient made an uneventful recovery and left for his home in Florida two weeks after the operation.

A DICEPHALOUS MONSTER.

HUGH B. CAFFEY, M.D.
PITTSBURG, KAN.

On account of the peculiarities of this case of dicephalous monster, I wish to record it, together with the facts pertaining to its birth.

Back view of dicephalus monster showing the double arm. The two spinal columns can readily be traced downward from the heads

History.—I was not engaged to attend the patient until labor had set in, so the history of the pregnancy previous to that time is unknown, except for the statement by the patient that she had been feeling very well, but had worried a great deal over domestic troubles.

The woman is an American, height 5½ feet, weight 150 pounds, aged 29. She is strong and healthy. She has been married seven years and has one healthy well-formed child, 4 years old. No miscarriages. She first felt fetal movements in December, 1905. The father of the child is 29 years of age and gives a good family and personal history. He has never had gonorrhea or syphilis. He has been drinking to excess for the past two years, which accounts for the domestic trouble referred to. There are no twins or deformities in either family, his parents having five and her parents three normal children.

Labor.—Labor pains began on the morning of May 5. About 7 o'clock I was called, and on examination found dilatation almost complete, the membranes unruptured, and the vertex presenting. Labor progressed in a normal manner; when the membranes ruptured there was great excess of liquor amnii. Diagnosis of the condition was not made until the second hand was felt presenting alongside of the first head. I made fre-

quent examinations and found that the head was making satisfactory advance, and that the efforts of Nature were not needing assistance. Labor terminated in about half an hour after the rupture of the membranes without the slightest laceration of the perineum. The placenta was of normal size, but the cord was very large. The fetus showed signs of life and there was feeble pulsation in the cord, but I was unable to start respiration. After using all the measures at my command for at least ten minutes the pulsation ceased and no signs of life remained. The parents objected to an autopsy, and I was only allowed to photograph and to measure the monster.

Description of Monster.—Sex, male, weight 10 pounds, length to top of right head 14 inches, to top of left head 13 inches, circumference of the chest at the level of the axillæ 11 inches. Measurements of the heads: Right head, occipitomental 5½ inches, suboccipito-bregmatic 3½ inches, anteroposterior 4½ inches; left head, occipitomental 5 inches, suboccipito-bregmatic 3 inches, anteroposterior 4¼ inches. The two outside arms and hands were perfect, as were the genital organs and lower extremities. Each head had a distinct neck and the distance between them was 2½ inches. So far as could be determined there was one sternum and two spinal columns, which could be outlined as shown in accompanying illustration. The middle or double arm is of particular interest in this case on account of the unusual deformity. I have been unable to find a similar case on record. There was a joint at the junction of the arm and body, corresponding to the shoulder joint, also an elbow and a wrist joint, which presented no special features. The arm measured 5 inches in length, being slightly shorter than the two outside arms. It was supplied with a set of muscles on both sides of the bones, which accounts for its large size. The hand had six fingers and two thumbs.

It is to be regretted that complete autopsy was denied, as doubtless many interesting anomalies would have been found.

A PROSTHETIC APPLIANCE FOR USE AFTER PARTIAL AMPUTATION OF THE FOOT.

GEORGE W. KING, M.D.

HELENA, MONT.

Artificial aid after partial amputation of the foot is seldom satisfactory for the reason that the normal elasticity on which

Fig. 1.—Condition of feet after operation.

ease of locomotion depends is practically eliminated by destruction of the arch and a proportionate crippling results. Taking, for example, one of the more common operations, Lisfranc's or its modifications, we have, as a rule, the ankle joint intact and are able to leave a substantial support for the body weight, but in walking the spring of the foot is lost, the stride is shortened and progression interfered with to a considerable extent.

One of my patients (Fig. 1) was in this condition until he began to use a device (partly his own suggestion) which has been of great assistance. By its aid he often walks a distance of from 6 to 7 miles without fatigue or discomfort; he has resumed his work as a miner and can readily ascend ladders or traverse uneven ground without stumbling; moreover, there is nothing in his gait which suggests his maimed condition.

This case affords a crucial test of the efficiency of the appliance (Figs. 2 and 3), which is constructed as follows: A piece of gun metal is fitted to what remains of the sole of the foot;

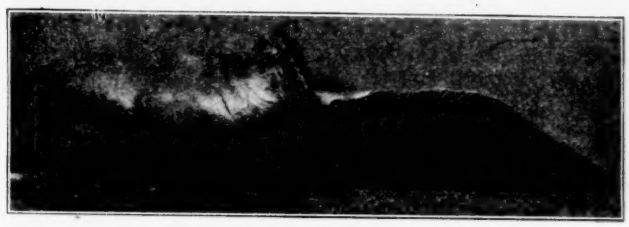


Fig. 2.—The appliance for lengthening the foot.

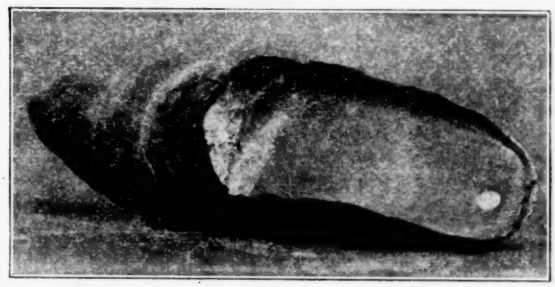


Fig. 3.—Another view of the appliance.

Fig. 4.—Normal appearance of the man's feet with this appliance.

it is given a slight curve upward following the natural curve. Under the instep it is carried forward to the extremity of the stump. At this point several narrow strips of spring steel are riveted and extended to converge at a point corresponding to the natural length of the foot. On the anterior surface two spiral springs are attached from a cross piece over the instep to the converging point at the toe. This frame work is covered with leather and when inserted into an ordinary shoe retains its form and when the stump is inserted and the shoe laced it furnishes an unyielding support and imparts a degree of elasticity unattainable by other means (Fig. 4).

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1657.*)

QUARTONOL.

A name applied to a mixture of tonols in tablets of 0.3 Gm. (5 grains), each tablet being said to contain lime tonol, 0.148 Gm. (2¼ grains), sodium tonol 0.148 Gm. 2¼ grains), quinine tonol 0.03 Gm. (½ grain), and strychnine tonol 0.00033 Gm. (1/200 grain).

Actions, Uses and Dosage.—See Glycerophosphates.

Manufactured by Chemische Fabrik auf Actien, vorm E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark.

SAL ETHYL.

ETHYL SALICYLATE. ÆTHYLIS SALICYLAS.

Ethyl salicylate, $C_2H_5(C_6H_4.OH.COO) = C_9H_{10}O_3$, is the salicylic acid ester of ethyl alcohol and is analogous to methyl salicylate (oil of wintergreen).

It is made by the action of salicylic acid on ethyl alcohol in the presence of sulphuric acid and subsequent purification.

It is a transparent, colorless, volatile liquid, possessing a pleasant characteristic odor and taste. Its sp. gr. is 1.184 at 20° C. (68° F.) and it boils at 231.5° C. (448.7° F.). It is insoluble in water, but soluble in alcohol.

Actions and Uses.—Sal ethyl has the same action as the salicylates, but is said to be less toxic.

Dosage.—3 to 6 c.c. (5 to 10 minims) 3 or 4 times a day in the form of gelatin globules.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

SALIFORMIN.

HEXAMETHYLENTETRAMINE SALICYLATE, MERCK. FORMIN SALICYLATE. UROTROPIN SALICYLATE.

Saliformin, $(CH_2)_6N_4.C_6H_4.OH.COOH$, is the salicylate of hexamethylenamine.

It is prepared by dissolving equal weights of hexamethylenamine and salicylic acid in water and evaporating the solution to dryness at a temperature below 60° C. (140° F.).

It is a white, crystalline powder, having an acidulous and disagreeable taste, readily soluble in water or alcohol.

It is soluble in cold sulphuric acid without color, becoming crimson on heating. Its aqueous solution is colored deep green by copper sulphate, violet by ferric chloride, and forms a yellow precipitate with bromine.

It is decomposed by basic substances (soluble hydroxides, carbonates, etc.) and by strong acids. It is incompatible with salts of iron and other metals which form insoluble compounds with salicylates.

Actions and Uses.—Saliformin is a genito-urinary antiseptic and is recommended as a uric-acid solvent. Its action does not differ materially from that of a mixture of hexamethylenamine and salicylic acid, for it is largely hydrolysed into its constituents in the presence of water.

It has been recommended in cystitis, lithiasis and bacterial affections of the urinary passages, also in gout, etc.

Dosage.—0.3 to 2 Gm. (5 to 30 grains) in tablets or elixir.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

SALIT.

Salit consists chiefly of the salicylic acid ester of borneol, $C_6H_4.OH.CO(C_{10}H_{17}O) = C_{17}H_{22}O_3$.

It is obtained according to the patent by heating a mixture of salicylic acid and turpentine and purifying the ester obtained.

It is an oily liquid, as nearly odorless as possible, insoluble in water, slightly soluble in glycerin, but readily soluble in alcohol, ether and oils. It is decomposed by alkalies into salicylic acid and borneol.

It is incompatible with alkaline media.

Actions and Uses.—Salit is absorbed by the skin after inunction and is decomposed in the body, liberating salicylic acid in the tissues. It appears to be liable to produce some local irritation and eczema of a mild type. It is antiseptic.

It is recommended in gout, articular and muscular rheumatism, neuralgia, erysipelas, pleurisy, etc.

Dosage.—It is used only externally, undiluted, by pencilling, or preferably by inunction with 5 to 10 Gms. (75 to 150 minims) of a mixture of equal parts of salit and olive oil.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 779,377. U. S. trademark.

SALOPHEN.

ACETYLPARAMIDOPHENOL SALICYLATE.
ACETPARAMIDOSALOL.

Salophen, $(C_6H_4.OH.COO).C_6H_4NH.(CH_3CO)$, is the salicylic ester of 1,4-acetaminophenol, $C_6H_4(NHCH_3CO)(OH)$.

It is made by preparing paranitrophenolsalicylate by a process similar to that of preparing phenyl salicylate (salol); converting this by means of reducing agents into paramidophenol salicylate, and this into acetylparamidophenol salicylate by the action of acetic acid. The crude salophen so obtained is then purified by crystallization from benzene or alcohol.

It forms small, white, crystalline leaflets or powder, odorless and tasteless, melting at 187° to 188° C. (368.6° to 370.4° F.), and containing 51 per cent. of salicylic acid. It is almost insoluble in cold water, more soluble in warm water, but freely soluble in watery solutions of the alkalies and in alcohol, ether and benzene, but not in petroleum benzin.

If its alkaline solution is boiled it gradually becomes blue; on continuing the boiling this color is discharged, but is again produced on cooling and exposure to air. On addition of ferric chloride to the alkaline solution the violet color characteristic of salicylic acid is produced, but a simple aqueous solution of salophen does not react with ferric chloride and should not be changed by silver nitrate. It forms a colorless solution with concentrated sulphuric acid.

It is incompatible with alkalies which decompose it.

Actions and Uses.—The actions of salophen resemble those of phenyl salicylate (salol). It is not changed in the stomach, but is broken up in the intestine, liberating salicylic acid and acetylparamidophenol, which is not toxic, like phenol. It acts as an antirheumatic, antipyretic, antiseptic and analgesic. It has been recommended in rheumatism, gout, typhoid fever, and as an intestinal antiseptic, in diarrhea and dysentery. Externally it has been applied in psoriasis and other itching skin diseases.

Dosage.—0.3 to 1 Gm. (5 to 15 grains), in powder, wafers or capsules. Externally in 10 per cent. ointment.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 492,868. U. S. trademark 29,759.

SALOQUININE.

QUININE SALICYLIC ETHER. SALOCHININ.
SALICYLQUININE.

Saloquinine, $C_6H_4.OH.COO(C_{20}H_{23}N_2O) = C_{27}H_{28}O_4N_2$, is the salicylic ester of quinine, containing 73.1 per cent. of quinine.

According to the patent specifications it is obtained by heating a mixture of phenyl salicylate (salol) with anhydrous quinine to 170° to 190° C. (338° to 374° F.) in a vacuum, whereby quinine salicylic acid ester and phenol are formed. The phenol set free is removed by distillation and the residue washed with dilute acetic acid to remove unchanged quinine.

It is a white, crystalline powder, melting at 138° C. (280.4° F.), perfectly tasteless and odorless. It is insoluble in water, soluble in acidulated water and moderately soluble in alcohol and in ether. It forms neutral salts which are tasteless and acid salts.

Its acid solutions are precipitated by alkalies and the usual alkaloidal reagents. The filtrate obtained after shaking saloquinine with water does not give a violet color with ferric chloride (absence of free salicylic acid).

It is incompatible with acids.

Actions and Uses.—It is a tasteless substitute for quinine and salicylic acid.

Dosage.—0.5 to 2 Gm. (8 to 30 grains).

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Merck & Co., New York). U. S. patent No. 678,401. U. S. trademark No. 37,373 (salochinin), No. 37,374 (saloquinine).

SALOQUININE SALICYLATE.

Saloquinine salicylate, $C_6H_4.OH.COO(C_{20}H_{23}N_2O)+C_6H_4OH.COOH = C_{34}H_{34}N_2O_3$, is the salicylate of the salicylic ester of quinine.

It is prepared by the addition of salicylic acid to a hot alcoholic solution of salicylic acid ester of quinine (see saloquinine) and collection of the crystals which separate out on cooling.

It is a white, tasteless powder, melting at 182° to 183° C. (359.6° to 361.4° F.), sparingly soluble in water, soluble in benzene, chloroform and hot alcohol.

It is incompatible with alkaline liquids.

Actions and Uses.—It is recommended in acute rheumatism, neuralgia, tabes, gonorrheal inflammations, etc.

Dosage.—1 Gm. (15 grains).

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 698,079.

SEXTONOL.

A mixture of tonols in tablets of 0.3 Gm. (5 grains), each tablet being said to contain lime tonol, 0.13 Gm. (2 grains); sodium tonol, 0.13 Gm. (2 grains); iron tonol, 0.03 Gm. (½ grain); manganese tonol, 0.015 Gm. (¼ grain); and strychnine tonol, 0.00033 Gm. (1/200 grain).

Actions, Uses and Dosage.—See Glycerophosphates.

Manufactured by Chemische Fabrik auf Actien, vorm E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark.

SIDONAL.

PIPERAZINE QUINATE. KINATE OF PIPERAZINE.

Sidonal, $\begin{matrix}\diagup CH_2CH_2\diagdown \\ NH \\ \diagdown CH_2CH_2\diagup\end{matrix}$ $NH.2C_6H_7(OH)_4(COOH) = C_{18}H_{34}N_2O_{12}$, is the normal salt of piperazine and quinic acid.

It is prepared by heating 1 molecule of piperazine with 2 molecules of quinic acid and maintaining the mixture at its melting point for some time, or by dissolving equivalents of piperazine and quinic acid in the smallest practicable quantity of water, concentrating the solution on a water bath, removing the residual water by repeated additions of small quantities of alcohol, evaporating and finally drying the residue in a vacuum.

It forms a white, crystalline powder, melting at 168° to 171° C. (334.4° to 339.8° F.) and having a faint acid taste and reaction. It is very soluble in water and forms salts on mixing the aqueous solution with solutions of alkali carbonates and evaporating to dryness.

It responds to tests for piperazine (precipitate with potassium-bismuth iodide, etc.) and quinic acid.

Its incompatibilities are those of the alkaloidal salts generally.

Actions and Uses.—Sidonal is recommended as a uric acid solvent in gout, neurasthenia, etc.

Dosage.—1 to 1.3 Gm. (15 to 20 grains) 5 or 6 times a day, dissolved in water.

Manufactured by Vereinigte Chemische Werke Actiengesellschaft, Charlottenburg (Victor Koechl & Co., New York), Eng. patent No. 11,420.

SODIUM CACODYLATE.

SODIUM DIMETHYLARSENATE.

Sodium cacodylate, $(CH_3)_2AsO.ONa + 3H_2O$, is the sodium compound of cacodylic acid, $(CH_3)_2AsO.OH$, a dimethyl derivative of arsenic acid, $AsO(OH)_3$.

It is prepared by distilling arsenous oxide with potassium acetate, oxidizing the distillate, composed of cacodyl $As_2(CH_3)_4$, and cacodyl oxide $As_2(CH_3)_4O$, with mercuric oxide, neutralizing the cacodylic acid with solution of sodium hydroxide and concentrating to crystallization.

It is a white powder, very soluble in water, forming needle-shaped crystals, hygroscopic, but otherwise of marked stability. The aqueous solution is alkaline toward litmus, but nearly neutral toward phenolphthalein.

On addition of silver nitrate T. S. to a solution of 1 Gm. of sodium cacodylate in 20 Cc. of water, a white precipitate is formed which is soluble in nitric acid and in ammonia water.

If to 1 Cc. of a 1 per cent. solution of sodium cacodylate, 10 Cc. of hypophosphorous acid are added and put aside for 1 hour in a closed container, a disgusting odor of cacodyl (caution on account of extreme poisonous properties of the gas) is apparent (distinction from sodium monomethyl arsenate).

If calcium chloride T. S. solution is added to a solution of sodium cacodylate (1:20) no precipitate will be produced in the cold nor on warming (distinction from sodium monomethyl arsenate).

A solution of sodium cacodylate (1:20) should show no yellow precipitate with ammonium molybdate T. S., when treated in boiling water; nor should a yellow precipitate form when the 1:20 solution is treated with sodium thiosulphate T. S. and with hydrogen sulphide T. S.; nor should a white precipitate form when, after acidulating with hydrochloric acid, barium chloride T. S. is added to the 1:20 solution.

Estimation: A weighed quantity (approximately 1 Gm.) is dissolved in 25 Cc. of water, one drop of methyl orange T. S. added, and then normal hydrochloric acid V. S. added until a faint pink color appears; 1 Cc. normal hydrochloric acid V. S. = 0.2125 Gm. of sodium cacodylate. If to the finished titration phenolphthalein T. S. is added a volume of normal potassium hydroxide V. S. equal to the volume of normal acid used, should be required to produce a red color; $(CH_3)_2AsO.OH$ being a monobasic acid toward phenolphthalein.

Actions and Uses.—The action of sodium cacodylate is similar to other arsenic compounds, but it is much less toxic than the ordinary preparations of arsenic and is also less apt to cause undesirable side effects. This superiority is due to the slow liberation of the arsenic ion in the body.

The cacodylate is particularly recommended in obstinate psoriasis, pseudoleukemia, diabetes, anemia, chlorosis, tuberculosis, malarial cachexia, etc.

Dosage.—0.025 to 0.12 Gm. (½ to 2 grains) in pills, hypodermically or by enema.

SODIUM CINNAMATE.

SODII CINNAMAS. SODIUM PHENYLACRYLATE.

Sodium cinnamate, $C_6H_5.CH:CH.COONa = NaC_9H_7O_2$, is the sodium salt of β-phenyl-acrylic (benzene-propenoic) acid, $C_6H_5CH:CH.COOH$.

Sodium cinnamate may be prepared by saturating a hot aqueous solution of sodium carbonate with cinnamic acid, evaporating and crystallizing. Cinnamic acid is obtained from balsam of tolu or may be produced synthetically by heating together benzaldehyde, sodium acetate, and acetic anhydride. By the latter method of preparation a purer product is produced which it is claimed is free from any by-effects of the acid from natural sources.

Sodium cinnamate is a white, crystalline powder, soluble in water, 1 part in 20, the solution being faintly alkaline. On boiling the alkalinity becomes stronger on account of the decomposition of the cinnamic acid forming sodium carbonate. Solution of sodium cinnamate (1 to 25) yields on the addition of ferric chloride, a yellow precipitate. On adding it to potassium permanganate solution, the red color of the permanganate is destroyed and the odor of benzaldehyde developed. If a solution of sodium cinnamate is treated with dilute sulphuric acid, a precipitate of cinnamic acid appears, which after purification should melt at 133° C. (271.4° F.).

It is incompatible with acids and with oxidizing agents, e. g. potassium permanganate.

Actions and Uses.—Balsam of Peru, cinnamic acid and sodium cinnamate are recommended by Landerer for the treatment of phthisis, the drugs being injected intravenously under strict aseptic precautions. The effect is referred by him to an inflammatory reaction, localized about the tuberculous foci and leading to cicatrizations. He records very favorable results in well-selected early cases, and other clinicians have also reported some successes, although the treatment fails very often. The synthetic cinnamate is preferred on account of its purity.

Dosage.—0.001 Gm. (1/60 grain), gradually increased to 0.02 Gm. (1/3 grain), in 1 to 5 per cent. solution, injected intravenously thrice weekly for long periods (3 to 18 months).

(*To be continued.*)

Naming of Carbon Compounds.—Diatomic: Alcohols and phenols containing two hydroxyl groups, diols, are said to be diatomic. Diazo: This is a prefix indicating the group N:N (di + azo) thus $C_6H_5N:N.Cl$ is diazobenzene chlorid.—*Pharm. Rev.*, August, 1906.

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THE INTESTINAL ORIGIN OF PULMONARY TUBERCULOSIS.

The extensive observations on the relation of pulmonary tuberculosis to the absorption of infective material from the intestine, which followed Koch's remarks on the relation between the human and bovine forms of the disease, have led to some modification of our ideas regarding methods of infection in phthisis. As is customary when attention is directed to one aspect of a question, some observers have advanced extreme views and, as usual, there is danger that these views will not be critically examined, but will be too widely accepted. That healthy skepticism which is so valuable an asset in the mental make-up of the scientific observer is often sadly lacking in the average physician.

About a year ago two pupils of Calmette, Vansteenberghe and Grysez[1] published an article, which has since been widely quoted, and which recorded experiments tending to show that foreign particles taken into the intestinal canal, or injected into the peritoneum, passed in most instances into the lungs and the thoracic glands. The article gave the impression, confirmed by the protocols, that the lungs were the organs which received the great mass of the ingested particles. Although the article dealt with problems having a direct bearing on anthracosis, its indirect bearing on pulmonary tuberculosis was obvious, and it naturally led many to the conclusion that pulmonary tuberculosis might be, in a large percentage of instances, primarily an affection of the alimentary rather than of the respiratory tract.

These authors, and those who quoted their work, either ignored or overlooked the fact that similar observations, done on a larger scale and, we think, it can be fairly stated with greater care, had been carried on years previously, and had led to entirely different conclusions. In the early discussions on the origin of anthracosis reference may be found to the work of such men as Arnold, Muscatello, Ponfick, Fleiner and a number of other equally well-known observers. The results of the numerous investigations carried on at this time, the latest of them twenty years ago, were in almost every instance opposed to the results of Calmette's pupils.

Since the appearance of the work of Vansteenberghe and Grysez the subject has been retested by Aschoff and recently by Schultze[2] and others with the result that the careful observations of Arnold, made twenty years ago, are substantially confirmed. It is shown that particles taken into the intestine do not lodge by preference in the lungs, though a certain small percentage of them invade these organs. It has further been made apparent that the technic of many of the ingestion experiments has been faulty, and that it is a matter of great difficulty to introduce particles into the intestinal canal from above and to avoid contamination of the air passages, even when a sound is used.

We must conclude from the available evidence before us at present that experimental work strongly favors the view that the infection in pulmonary tuberculosis takes place, in the vast majority of instances, through the respiratory and not the alimentary tract. For the present we must continue to assume that inhalation tuberculosis is the common form of pulmonary tuberculosis, and we must continue to take the precautions against its spread which experience has suggested and which practice has shown to be distinctly of value. This view does not, of course, imply that intestinal infection with the tubercle bacillus may not lead to pulmonary tuberculosis. There is good evidence that it occasionally does, but there is a wide difference between the view that pulmonary tuberculosis is an occasional sequence of intestinal infection, and the belief that it is commonly of intestinal origin. The latter view, in the light of present knowledge, is untenable.

1. Annales de l'Institut Pasteur, xix, No. 12. See editorial in THE JOURNAL, p. 1100, and abstract, page 1660.

2. Zeitschrift für Tuberculose, 1906, ix, 425.

PREVENTION OF CANCER.

In the fight against preventable diseases there has gradually come a time in the history of each one which has been systematically attacked, when a general and concentrated effort has been made to stamp it out. The crusade against tuberculosis may be cited as an example.

Keetley[1] has recently suggested that the time has arrived when the prevention of cancer must be regarded as a practical problem ripe for solution. In this connection numerous precautionary measures are suggested, some of them eminently practical, others somewhat chimerical. All are based on the assumption that cancer is a parasitic disease. Among the practical suggestions that Keetley makes, the care of the mouth and teeth, the destruction of dressings from ulcerated malignant growths, the healing, when possible, of chronic non-malignant ulcers, and the excision of doubtful tumors are all worthy of attention. Other suggestions, as the sterilization of food, abstinence from alcohol, tobacco and meat, and avoidance of milk, are, we fear, not practicable.

Even though cancer is not proved to be parasitic, and

1. Lancet, Oct. 13, 1906, p. 993. Abstracted in THE JOURNAL, Nov. 10, 1906, p. 1599.

hence contagious, it will do no harm to regard it as such if this leads to greater precautions in cancer cases. Something very definite as to its etiology will have to be demonstrated, however, before physicians can be persuaded to advise their patients to sterilize their food, to avoid meat and milk, and to abstain from stimulants of any kind. We have as yet little or no direct evidence to connect cancer with food, and until we have it is undesirable to remove from the dietary such staples as the author suggests.

While we regard many of Keetley's suggestions as practical, we would suggest that the extension of the plan of action suggested by the Committee on Cancer of the Uterus at the last session of the Association affords the best means to the profession in this country of combating this terrible and fatal disease. Some forms of cancer come very close to the uterine variety as causes of death, and it seems to us eminently desirable that experts in the various forms of cancer be delegated to draw up suggestions for plans of campaign against each form. As in tuberculosis, so in cancer, the education of the public is our most important weapon in the fight, and education in the early manifestations of the disease is the great desideratum.

NIGHT WORKING.

About a year ago, when it was announced that an all-night bank was about to be opened in one of the large American cities we deprecated the fact because it seemed to be an entering wedge for the splitting off of further time from the hours of rest which this generation seems to consider so valueless but which physicians are convinced is almost the most precious part of modern life. We suggested then that further commercial developments along the same line might be looked for and already the little prophecy is proving true.

In London an important department store now keeps a sufficient staff of clerks on duty all night so as to take orders with the assurance that the goods will be delivered early next morning. It is understood that some of the important commercial institutions in this country have the establishment of a similar department under consideration. There seems no doubt that the hours of rest are to be further invaded in large cities and that the candle is to be burned at both ends not alone by alternation of business and pleasure by day and by night, but also by business invasion during the hours formerly considered inviolate to recuperation.

A certain number of workers at night seem to be absolutely necessary in modern life. Those engaged in the various protective departments and in transportation must invert the usual physiologic cycle and do their sleeping as best they may during the daylight hours. It is well known, however, that such persons present, as a rule, a marked lack of resistive vitality to disease which does not encourage an enlargement of this class of workers.

The present announced developments in city commerce are likely to lead to a large increase in the number of these night workers, and it is doubtful whether pressure by those who are interested in public hygiene will be powerful enough to curb this tendency. Not only will night work prove a source of no little detriment to the health of many workers, but the responsibilities thus crowded on proprietors, who can not feel entirely free even during the night, will add greatly to the neurotic ills, because of the increased nervous strain.

THE RESPONSIBILITIES OF THE PROFESSION.

It is noteworthy that physicians realize as never before the benefits of organization, not only to individual members, but also to the medical profession in its complex relations to the general public. While practically all of the states of the Union have taken final action and have adopted the "essentials to uniformity" of organization, the work has not as yet been completed. In this direction, the results already accomplished by Dr. J. N. McCormack are worthy of the highest commendation. Moreover, there are at present to be found scattered throughout the length and breadth of our land many volunteers who have taken up the work with zest and earnestness.

The beneficent influences of organization, Dr. J. M. Anders[1] of Philadelphia states, are easy of explanation, and among the most obvious stands its power to stimulate men to useful tasks. It is undeniably true that the major portion of important and far-reaching constructive work by members of the medical profession is performed under the stimulus of an organized society. Again, the association of men together leads to the establishment of relations which play no minor part in their mutual advancement. To belong to the county medical society, then, is a necessity at the present day, if the physician would take advantage of the principal means at his command to advance himself in the profession. Organization means progress, not alone to the individual member, but to the profession, for by organization the profession gains added weight, influence, dignity and honor.

Unquestionably, the county medical societies should and are coming to appreciate their advisory capacity in matters that relate to the physical and moral welfare of the community. Men should be prepared to take up seriously the consideration of the medical service to be maintained and improved; they should be thoroughly acquainted with their rights, privileges and power for safeguarding the most vital interests affecting the well-being of the community.

In regard to the question of promoting the general good, Dr. Anders declares that the medical profession had scarcely kept pace with the march of civilization.

1. In his address on retiring from the presidency of the Philadelphia County Medical Society.

The county medical society should aim to procure suitable municipal and state legislative enactments, to secure ample and appropriate accommodations for the consumptive and the insane poor, and to remove the dense clouds of ignorance which so effectually retard the progress of state medicine and other branches of professional work. It is especially in the matter of public instruction and enlightenment that the medical profession as an organized body fails to meet its true responsibility.

PURE MILK AND INFANT MORTALITY.

A mother having with tears told Dr. Osler that it had pleased Providence to take her baby from her, he responded that it was unfair to blame Providence, who had had nothing at all to do with the matter, and said: "It was bad milk that killed your baby." Of late years the mortality of infancy and early childhood has been decidedly diminished, at least in New York. In that city in 1881 the death rate from diarrheal diseases among children under 5 was 33.3 to the 1,000; in 1905 it was 14.9 to the 1,000. In the latter year, during the three months following June 10, the mortality from the same cause and under the same age limit was 4,086; this year in the corresponding period the deaths were 3,662. Unquestionably we must thank "cleaner milk" for the saving in 1905 of many, if not all, of these 20 infant lives out of 1,000 that would have been lost in 1881, and of the 10 per cent. reduction of infant mortality in the heated term of 1906 over that of the same period in 1905. And in this estimate we must not fail to consider the enormous amount of illness and distress not ending fatally that was obviated by the use of wholesome milk. Practically all diarrheal diseases, so fatal as they are to infancy, are caused by impure milk. Absolutely pure, clean milk is no doubt unattainable, especially for the very poor. These qualities, however, are being decidedly approximated, thanks to health department and medical society activities, to the education of the poor in rational methods of infant feeding and to the combating of inordinate greed on the part of some dealers. We say "some" dealers; for human nature, among them, as in all other walks of life, is well intentioned. In most cases all that has been necessary has been to prove to the dealers that clean milk pays better than dirty milk. And the few who are unprincipled are finding that it does not pay at all when any sunrise in the metropolis there are thirty-one health inspectors "pouring into the sewers death and disease that a few years ago would have been sold and used as children's food."

YELLOW FEVER IN CUBA.

The reappearance of yellow fever in Havana, together with the recent political troubles there, is an unfortunate augury for what may happen if the island is to be left entirely to be self-governed. According to the New Orleans *Picayune's* Havana correspondent, the appropriations for health purposes were remorselessly cut in the Cuban congress to an extent that practically destroyed the usefulness of the department. If Cuba is to be a good neighbor, the provision of the Platt amendment which requires due attention to sanitation, should be and must be observed. Havana is the starting point, apparently, for Cuban yellow fever, but it is easy for it to persist in remoter localities unknown to the more active health authorities of the city, and these also should be looked after. It is also stated by the *Picayune's* correspondent that the practice of appointing unfitted persons to offices for political reasons was extended in Cuba to the health department and that as a result a number of inefficient employés used up the appropriations without due return of service. Of course, these evils will be remedied during the American occupation. The problem is not at present so serious a one as Dr. Gorgas had to meet, and he demonstrated that there is no necessity for Havana to be a radiating focus of pestilence such as it was in former years. There should be some adequate guarantee, however, against the possibility of the old evils when the Cubans are again left to their own devices.

MEDICAL AND SPIRITUAL CO-OPERATION IN RELIGIO-NEUROTIC CASES.

A Boston clergyman, it is reported, has recently asked the assistance of a distinguished physician to aid him in the treatment or management of certain cases. He has recognized that there are many coming to him for whom relief can be obtained by medical rather than by spiritual advice. He, therefore, proposes to form a class for such persons which will be in charge of the physician and others, who will follow out the ideas—in a modified form—of Professor Dubois as published in his work on "Psychic Treatment of Nervous Diseases." The benefit of such a plan is beyond question in some cases, but it will require the most judicious co-operation between the physician and the spiritual director. There is a diseased sort of religion or neurasthenic pietism to which churchly methods in one form or another appeal, and for which a judicious medical adviser is perhaps occasionally the best prescription. Religion is always the best solace in disease, even if it is sometimes morbidly modified. On the other hand, speaking medically, ill health or physical deprivation in one way or another may be the most powerful suggestive treatment for inducing spiritual welfare. There are some devils that require fasting as well as prayer to cast them out. Bunyan was one of these neurotics in his early life, and perhaps, in part, it is to this that we owe his unequalled allegory which covers almost every possible phase of Christian experience. As regards the vast number of self-centered neurasthenics who take to religion in their morbid way, the co-operation of a religious and scientific physician could be of the greatest value to a pastor. Even a free thinker like Dubois claims that he could co-operate, in feeling at least, with pastors of all denominations in the desire to utilize religious faith in the treatment of psychoneuroses. The proposition of the Boston minister should be suggestive to others. It is possible that some have already tried it. Properly carried out and with due individual study, such as is said to be proposed, it may do much good.

THE PUBLIC HEALTH DEFENSE LEAGUE.

In another column will be found a report of a conference of public-spirited men and women—both medical and lay—held in New York last week, to organize a national society for the protection of the public against quackery in all its forms. The conference was certainly a representative one, for not only was the medical profession well represented, but also various sectarian religious bodies, as well as temperance organizations. The conference resulted in the organization of a body to be known as the Public Health Defense League. This movement is the result of the active work of the Medical Society of the County of New York, through its attorney, Mr. Champe S. Andrews, against the fraudulent quacks in New York City. The success of the work of this society, by the way, shows that public opinion will back up the efforts for suppressing frauds, even as regards advertising quacks. The New York *Herald* comments very favorably on the organization of such a league. We quote the following from the editorial: "All 'patent-medicine' manufacturers should be compelled by law to label their products and give not only the ingredients but their proportions, so at least that each venturous experimenter can know what he is taking. No secret should be withheld when health or life is at stake. No mere trade interests should balance themselves against human suffering and human needs. The medical profession has been keenly alive to the necessity of reform in this matter and refuses to use remedies the composition of which is not given. Even the various medical journals which shamefully advertise such nostrums for purely business reasons, thus doing a double wrong in attempting to deceive the profession and the public, are now being called to the bar of medical opinion for violation of the fundamental principles of high medical ethics. The American Medical Association, with all praise be it said, is using its powerful influence through its JOURNAL to remedy conditions in this regard and to give the true sentiment of the profession in the premises. There is also great promise of reform, not only in this, but in other directions, when the legislative committee of this learned body openly joins its endeavors to those of the national league and valiantly and unreservedly commits the medical profession of the country to the praiseworthy movement in question." While originally it was the intention, evidently, to limit the work of the proposed organization to the suppression of quack doctors, it seems to have taken—and wisely—a broader view of affairs, and will take a hand against adulterated foodstuffs, fraudulent "patent medicines," etc. As we understand it, it is proposed to have branches of the Public Health Defense League in every state, and it is to be hoped that the profession will be found ready to coöperate and assist in the splendid work. It is well that the inception of such an organization comes from the public and not from the medical profession. While the latter knows the need of such work as this league proposes to do, yet the public itself has become so enlightened through the efforts of *Collier's Weekly* and other lay journals that it is ready to assist in checking the great American fraud, not only as it applies to "patent medicines," but to quackery and fraud in general.

Medical News

DISTRICT OF COLUMBIA.

Open-Air Ward for Tuberculosis.—The open-air treatment for consumptives will be the important feature of the Municipal Hospital, Washington, which is to be located near the District line on a 30-acre site of pine land. Dr. George M. Kober plans a roof garden covering the entire top of the building, open on three sides and protected on the north by a brick wall with ample windows for the admission of fresh air and sunshine. The buildings are all to face the south, and the pavilion will be large enough to accommodate 60 patients.

Personal.—The following appointments have been made in the Medical Department of the George Washington University: Professor of nervous diseases and clinical director of the Governmental Hospital for the Insane, Dr. Charles H. Clark; professor of physiology, Shepherd I. Franz, Ph.D., pathologic physiologist at the McLean Hospital, Waverley, Mass.——Dr. J. Ford Thompson, Washington, was taken seriously ill with hemorrhage of the stomach while in London, November 5, and operation was performed November 10. He is reported now to be improving and his condition is considered hopeful.

ILLINOIS.

State Board Laboratories Removed.—The laboratories of the State Board of Health, Springfield, have been removed to larger quarters at 228 East Capitol Avenue.

Unlawful Practitioners Fined.—W. R. Grady, charged with practicing medicine without a license at Rushville, was fined $100 and costs, November 1.——J. F. Alderson, an osteopath of Urbana, was fined $100 for practicing medicine without a license.

District Society Meeting.—The Fifth District Medical Society held a meeting in Pekin, November 8, at which Dr. Eugene F. Kelchner, Delavan, was elected president, and Dr. Carl G. Muehlmann, Pekin, secretary-treasurer. The mayor of Pekin delivered the address of welcome, which was responded to by Dr. J. Whitefield Smith, Bloomington, councilor for the district.

Hospital Notes.—By the will of the late Joseph F. Glidden, De Kalb, after a number of bequests, the residue of the property is devised to the daughter of the deceased, and within five years after her death the trustees appointed are directed to found and build a hospital in De Kalb, to cost $22,000, to be known as the Joseph F. Glidden Hospital.——The donations to Blessing Hospital, Quincy, from hospital day amounted to $2,674.

Personal.—Dr. Charles H. Mills, Champaign, has completed half a century of practice in that city.——Dr. Joseph Studer was the guest of honor at St. Francis' Hospital, Peoria, October 29, in celebration of the fiftieth anniversary of his connection with the hospital.——Dr. Austin M. Lindley, Urbana, fell from the haymow of his barn, November 11, and sprained his arm.——Dr. Arch G. Servoss has been appointed local surgeon at Havana for the Illinois Central Railroad, vice Dr. P. L. Dieffenbacher, deceased.

Æsculapian Society Meeting.—The Æsculapian Society of the Wabash Valley held its sixtieth annual meeting in Paris, October 25. The following officers were elected: President, Dr. Charles B. Johnson, Champaign; vice-president, Dr. Finis E. Bell, Mattoon; secretary-treasurer, Dr. Herbert N. Rafferty, Robinson (re-elected), and censors, Drs. John T. Montgomery, Charleston; Cyrus E. Price, Eaton; Mark Rowe, Paris; W. E. Belle, Terre Haute, Ind., and Thomas E. Walton, Danville. Champaign was chosen as the place for the semi-annual meeting in May, 1907.

Communicable Diseases.—A case of smallpox was reported in Oak Park, November 14.——On account of the prevalence of diphtheria, the public schools, Sunday schools and churches of Fairfield were ordered closed, November 11.——The health commissioner of Moline reports that there are at present in that city 19 cases of scarlet fever, 4 cases of diphtheria and one case of smallpox.——Diphtheria is reported to be epidemic in South Peoria. The Garfield school has been placed under guard to prevent the spread of the disease.——Scarlet fever is reported in Oakland, and the schools in that city have been closed.——At Viola 4 cases of smallpox are reported.

Chicago.

Personal.—Dr. T. C. Williams, fellow in zoology in the University of Chicago, has been elected professor of biology at Morningside College, Sioux City, Iowa.

Provident Hospital Report.—The fifteenth annual report of Provident Hospital shows that during the year 1,216 patients

were treated in the hospital and nearly 5,000 in the dispensary. The training school graduated a class of nine during the year.

Faith Healer Fined.—A. W. Birkholz, who advertised to heal all diseases without the use of medicine, was prosecuted by the Illinois State Board of Health, and on November 14 was fined $100 and costs, by Justice Underwood, for practicing medicine without a license.

Home for Nurses Open.—The legal transfer of the new home for nurses, Wesley Hospital, erected at a cost of $30,000, was made November 3, when the trustees formally accepted the building from the donor, N. W. Harris. The building has been occupied since September.

Alumni Association Meeting.—The Cook County Hospital Alumni Association held its fortieth annual reunion November 15. Dr. Nicholas Senn was elected president, and Dr. Frederick A. Besley, secretary, and addresses were made by Drs. Nils T. Quales, the first of the internes, Drs. Senn, Ingals, Billings, Bacon and others.

Coroner's Record for October.—The report of the coroner of Cook County, issued November 1, shows an increase in the number of deaths for October over the preceding month, the respective numbers being 351 and 308. There were 46 suicides in October, as compared with 36 in September; of these 18 died from gunshot wounds, 9 from poison and 10 from asphyxiation.

Bequests.—By the will of the late Mrs. Lucretia J. Tilton $6,000 is devised to the Elliot City Hospital, Keene, N. H., and after the payment of other bequests the remainder of the estate, which is estimated at more than $50,000, is to be divided among the five legatees, in which the Visiting Nurse Association of Chicago and the Passavant Memorial Hospital are included.

Hospital Order Passed.—At a meeting of the city council, November 12, Alderman Young presented an ordinance which was passed, prohibiting the removal of the Chicago Lying-in Hospital from its present location to a site facing Washington Park. The ordinance provides that before a hospital can be opened in any neighborhood frontage consents from the surrounding property owners must be secured. This ordinance also affects the McCormick Memorial Hospital for Infectious Diseases.

Many Deaths for the Week.—During the week ended November 17 there were 584 deaths, 70 more than for the preceding week and 74 more than for the corresponding week of 1905. This is equivalent to an annual death rate per 1,000 of 14.86. The excess in deaths was almost entirely among those beyond middle life, and especially in individuals over 60 years of age, the deaths in this age period amounting to 22.09 per cent. of the total mortality, or an excess of more than 12 per cent. over the November average. The death causes showing greatest increase were: Heart disease, 22; pneumonia, 16; nephritis and scarlet fever, each 10; bronchitis and cancer, each 8, and cerebral hemorrhage and whooping-cough. Those showing a decrease were: Nervous diseases, 10; consumption, 6; convulsions, 5, and acute intestinal diseases, 4. The chief causes of death were: Pneumonia, 84; violence (including suicide), 39; cancer and acute intestinal diseases, each 30; diphtheria, 19; scarlet fever, 16, and typhoid fever, 12.

INDIANA.

Hospital Incorporated.—The State College Hospital has been incorporated in Indianapolis by Drs. Simon P. Scherer, David L. Kahn and Charles R. Sowder.

Epileptic Village Nearing Completion.—Work on the state epileptic village, New Castle, is now completed and the buildings are ready for the interior finish.

Removal.—The offices of the *Indiana Medical Journal* have been moved from the Willoughby Building to the Indiana Medical College, Medical Department of Purdue University.

Malpractice Suit Ended.—In the case of Joseph Wardell against Dr. Burnham C. Dale, Marion, in which $5,000 was claimed for alleged malpractice, tried October 30, the case was withrawn on motion of the attorney for the plaintiff.

State Board May Not Condemn Buildings.—Denying the power of the State Board of Health to condemn public school buildings, and holding that the board has no power to enforce condemnation, J. B. Kenner, sitting as special judge in the Huntington Circuit Court, ordered a writ of mandamus to issue against Edward Fisher, trustee of Polk Township and his advisory board. The writ provides that certain repairs shall be made to the buildings at once and that the school shall be open.

Society Meetings.—The Union District Medical Society of Ohio and Indiana, at its meeting in Hamilton, October 25 and 26, elected Dr. Charles S. Hougland, Milroy, president, and Dr. Franklin T. Dubois, Liberty, secretary. The next meeting of the association will be held in Connersville in April, 1907.——The meeting of the Thirteenth District Medical Society was held at Warsaw, October 30. Dr. Angus C. McDonald, Warsaw, was elected president for the coming year and Goshen was the place selected for the next semiannual meeting.

Personal.—Dr. Maurice I. Rosenthal, Fort Wayne, is seriously ill and is taking an extended trip to the West.——Dr. John W. Morr, Albion, has been elected to Congress.——Dr. Alpheus Toms, Goshen, formerly a practitioner of Scott, La Grange County, had a narrow escape from death by gas asphyxiation at his home in Goshen, November 10.——Dr. Oliver P. Terry has been appointed instructor in physiology and anatomy in the Department of Biology, Purdue University.——On account of septicemia, Dr. Arthur K. Hammond, Fort Wayne, was obliged to have the index finger of his left hand amputated, November 6.

Diseases and Death.—During October tonsillitis was the most prevalent disease, followed in order of prevalence by typhoid fever, rheumatism, bronchitis, diphtheria, scarlet fever, diarrhea and pneumonia. There were 118 cases of smallpox reported from nine counties, with 3 deaths. Typhoid fever was very prevalent, 732 cases being reported from 73 counties, with 150 deaths. Diphtheria and scarlet fever were reported in many places in epidemic form. The deaths from diphtheria numbered 64, and those from scarlet fever 9. The deaths reported during October were 2,847, equivalent to an annual death rate per 1,000 of 12.6.

Trustees to Appeal to Legislature.—After the city council of Richmond had passed an ordinance appropriating $6,000 to the Reed Memorial Hospital, over the veto of the mayor, that official on November 7 ordered the city controller not to issue the warrant, basing his action on the claim that the action is illegal. The trustees, believing that the city has a right to appropriate money for the hospital, will make no effort through the courts to gain possession of the funds, but will ask the next legislature to enact a law which will give the city the right to extend financial aid to hospitals designed for the public although not under the direct care of the municipality.

IOWA.

Practitioners' Club Organized.—Thirty physicians of Cedar Rapids met in the Commercial Club rooms October 29 and organized "The Medical Practitioners' Club of Cedar Rapids."

Communicable Diseases.—Typhoid fever is reported to be in and around Marne.——Diphtheria in malignant form is reported at Jefferson. Four deaths have occurred, the schools have been ordered closed and public meetings discontinued.——Spirit Lake is threatened with a serious epidemic of scarlet fever.

State Laboratory Report.—Dr. Henry Albert, director of the Iowa State Board of Health hygienic laboratories, Iowa City, reports that during October 915 examinations were made in the institute. On account of pressure of work an auxiliary laboratory has been established in Mason City in charge of Drs. Starr and Albert.

Supreme Court Affirms Conviction.—In the case of J. C. White, Webster County, convicted of practicing medicine without a license, the Supreme Court on November 14 affirmed the decision of the lower court. The defendant styled himself a doctor of "neurology and ophthalmology," but the Supreme Court in its decision is reported to have classed him as a "charlatan and impostor."

Rummage Sale Interdicted.—Dr. Grant J. Ross, city physician of Sioux City, has given orders to stop any rummage sales projected by church societies and charitable institutions of the city, unless the second-hand clothing contributed for such sales first be disinfected. Dr. Ross says that several cases of contagious disease in Sioux City have been traced directly to goods purchased in rummage sales.

Personal.—Dr. Walter L. Bierring, Iowa City, underwent amputation of the right leg, November 5, on account of an epithelioma recurring from an old scar.——Dr. Grant has been appointed lecturer on pediatrics in the State University of Iowa College of Medicine, Iowa City, vice Dr. George E. Decker, Davenport, resigned, who is spending a year in Europe.——Dr. Belle Conrad, Webster City, was thrown from her carriage November 5, and seriously injured.——Dr. Joseph A. Valenta has been re-elected health officer of Iowa City.——Dr. William P. Slatterly, Dubuque, has been appointed surgeon of the Illinois Central Railway.——Dr. Ernest J. Waddey has been appointed local surgeon of the Illinois Central and Dr. Earl B. Rogers for the Rock Island System at Waterloo.

KENTUCKY.

Typhoid **Fever.**—Typhoid fever is said to be epidemic in the neighborhood of Utica, near Owensboro.

Physician **Acquitted.**—Dr. Chester M. Beach, charged with the murder of H. F. Lumer, at Esculapian Springs, in August, 1905, was acquitted, as the evidence indicated that the defendant shot Lumer in self defense.

Mission **Medical Department.**—A medical department has been added to the Holcomb mission, Louisville, by Mrs. E. M. Cardwell. Dr. Stephen C. Quimby will have regular office hours at the mission from 4 to 5 each day.

Endorse **Issuance of Bonds.**—The Jefferson County Medical Society, at its last meeting, voted to endorse the issuance of $4,000,000 in bonds by the city of Louisville for the purpose of building a comprehensive system of sewers in that city.

Illegal **Practitioners Fined.**—The State Board of Health has prosecuted and is reported to have obtained a verdict with a fine of $50 against John A. Taff, proprietor of the Louisville Sanitarium, an institution operated for the "cure of locomotor ataxia, paralysis and kindred diseases." The defendant entered a plea of not guilty. The prosecution was instituted by Drs. Joseph M. Mathews, William Baily and Chester Mayer, executive committee of the State Board of Health. The prosecution introduced testimony to show that medical prescriptions, signed by Taff, had been filled at a neighboring drug store and that medicine had been injected by Taff into the intestine of a patient who died several days later. The defendant is said to have visited everyone in Louisville whom he could hear of, as suffering from locomotor ataxia and paralysis in his endeavor to have them take treatment with him. The conviction of the defendant was based principally on his own statement that he had often diagnosed the cases of patients and referred prescriptions of his making to the staff physicians.

MARYLAND.

Annual **Meeting.**—The annual meeting of the Frederick County Medical Society was held in Frederick, November 14. Dr. Jesse W. Downey, New Market, was elected president; Drs. W. Crawford Johnson, Frederick, and Joseph H. Leib, Mount Pleasant, vice-presidents; Dr. Ira J. McCurdy, Frederick, secretary; Dr. Wilson A. Long, Frederick, treasurer; Dr. Franklin B. Smith, Frederick, delegate to the Medical and Chirurgical Faculty of Maryland, and Drs. Charles F. Goodell and Franklin B. Smith, Frederick, and William H. Wagner, Woodsboro, censors.

Change in **Medical Staff.**—The directors of the Western Maryland Hospital, Cumberland, have decided to establish a medical and surgical staff in lieu of a resident physician. The active medical staff is composed of Drs. Thomas B. McDonald, Edgar T. Duke, Edward H. White and Charles L. Owens, who will each serve terms of three months in alternation. The active surgical staff is composed of Drs. James M. Spear and Arthur H. Hawkins, surgeons-in-charge, with Drs. William W. Wiley, Frederick W. Fochtman and Wyllys Hodges, associates. Dr. Charlotte B. Gardner was appointed pathologist, and Drs. Emmett L. Jones and Robert Y. Fechtig were appointed ophthalmologists and otologists.

Baltimore.

Medical **Club Election.**—The Baltimore Medical Club at its annual meeting, October 25, elected Dr. Charles A. O'Donovan, president; Dr. Eugene H. Hayward, vice-president; Dr. Edward L. Whitney, secretary, and Dr. J. C. C. Botts, treasurer.

Personal.—Dr. Henry M. Hurd, superintendent of the Johns Hopkins Hospital, left for his year's vacation November 16. He goes first to Havana, thence to Mexico, and from there to Southern California and Europe.——Dr. William B. Perry was thrown from his automobile in a collision with a street car, November 15, and severely hurt about the head.

Discuss **Nostrums.**—A joint meeting of the Maryland Pharmaceutical Society and the Medical and Chirurgical Faculty of Maryland was held November 16, to discuss "Nostrums and Proprietary Remedies." It was addressed by Drs. Harvey W. Wiley, Washington, and C. Urban Smith, Baltimore, representing physicians, and by Messrs. John B. Thomas and Henry P. Hynson, representing the pharmacists. Statistics were given showing that more than 50 per cent. of physicians use their remedies habitually. An object lesson was afforded by a large number of bottles containing drugs put up according to the National Formulary in the department of pharmacy of the University of Maryland. The discussion which followed showed great ignorance on the part of physicians of the National Formulary, and much surprise was shown when Prof. Charles Caspari stated that there was not a proprietary remedy which could not be duplicated by an official formula in the National Formulary. The preparations shown will be kept on exhibition at the rooms of the Medical and Chirurgical Faculty for the enlightenment and guidance of medical men. Many compliments were paid THE JOURNAL for its efforts against secret remedies. An excellent proposal was made for a therapeutic society composed of pharmacists and physicians. Not only would a better feeling be engendered between the two closely allied and mutually dependent professions, but each could gain help and knowledge from the other.

MASSACHUSETTS.

Rabies Reappears.—Rabies has appeared in Boston again, this time in Jamaica Plains. So far this year 29 rabid dogs have been reported within the city limits.

Medical Inspection Urged.—The school committee of Boston has been strongly urged to extend the work of medical inspection of the schools and gave a public hearing on the matter. Many physicians attended and urged especially the need of the assistance of nurses, as in New York City, and the importance of strict rules with regard to tuberculosis.

Validity of Vaccination Certificates.—The town council of Rockland has tried to establish the ruling that certificates for school children, stating that they are unfit subjects for vaccination, are valid for an indefinite period. As this controverts the decision of the attorney-general of the state that school authorities need not accept such certificates at all if they suspect that they have been issued for insufficient cause, it is probable that the courts may be called on to decide the matter.

Anti-Tuberculosis Association's Work.—The Cambridge Anti-Tuberculosis Association during the past year, its fourth, has aided 30 patients in securing board at the Rutland Sanatorium; 15 in securing board in the country; 25 in securing admission to various hospitals; has provided 25 with special nourishment at their homes; assisted 7 in returning to other countries, and has had 27 under the care of its own physicians. Of the 35 patients whom the society has sent to Rutland during the past four years 68 per cent. have been returned to their normal places as wage-earners in the community. In all more than 300 people were helped during the past year.

MICHIGAN.

Medical Journals Consolidated.—Parke, Davis & Co. announce that the *Medical Age* and *Medicine* will be consolidated with the *Therapeutic Gazette*, Jan. 1, 1907.

Typhoid Fever.—Typhoid fever is reported to be epidemic in Lakewood, the logging headquarters of the Holt Lumber Company.——Three Oaks reports 24 new cases of typhoid fever, with 3 deaths.

Medical Inspection.—During October the medical inspectors of Detroit examined 3,682 children, of whom 357 were excluded on account of communicable diseases. During the month 34 new cases of diphtheria and 21 cases of scarlet fever were reported.

Personal.—Dr. Richard Leuschner, Mount Clemens, has gone to Europe.——Dr. Duncan A. Cameron, Alpena, has been elected physician of Alpena County, vice Dr. Samuel T. Bell. ——Dr. James B. Wallace, Saline, has been elected coroner of Washtenaw County.——Dr. Robert Walton, Portland, who is about to leave for New Mexico, was presented with a silk hat and suit case by his friends in Portland, October 31.——Dr. Jabez Perkins, Owosso, celebrated his eighty-sixth birthday, October 26.

Ill and Injured.—Dr. Edwin Eaton, Hudson, has gone to Ann Arbor to undergo an operation at the University Hospital.—— Dr. Roch R. Gareau, Detroit, who was injured by the crank of his automobile, three months ago, is still in a critical condition.——Dr. Enos C. Kinsman, Saginaw, who has been ill with pneumonia and appendicitis, is reported to be improving.—— Dr. Romeo H. Earle, Eloise, who has been ill with septicemia in a hospital in Detroit, is improving and has returned home. ——Dr. Alexander Thomson, Adair, who has been ill in the Port Huron Hospital with typhoid fever, is convalescent.—— Dr. DeWitt C. Howell, Onaway, was operated on in Detroit, November 3, and is reported to be recovering.

Tuberculosis Sanatorium.—The Onekama Heights Sanatorium was organized March last, under the auspices of the Manistee County Medical Society as a tent colony for tuberculosis. The institution is conducted on the self-supporting basis, but is semi-philanthropic. The following benevolent funds have been established, to which subscriptions are invited: Endowed or free bed fund; nominated bed fund; the building endowment fund; clinical research laboratory fund,

and the general endowment fund. The institution is under the medical care of Dr. W. E. Coates, formerly of Chicago. The association owns 85 acres of land, 75 of which are woodland and 15 farm land, one mile north of Onekama and Portage Lake Harbor of Refuge, and three miles east of Lake Michigan. The land is on the southern slope of a range of hills 350 feet above the lake.

MONTANA.

New Legislators.—The following physicians of Montana have been elected to the tenth general assembly: Dr. Willis H. Haviland, Butte, to the senate; Drs. George H. Barbour, Helena; Charles B. Miller, Helena (second term); Donald Campbell, Butte, and A. T. Leighton, Boulder, to the legislature.

Hopital Notes.—The Silver Block, Kalispell, has been leased by physicians of that city and will be converted into a hospital with 36 rooms.——Work on the hospital being erected in Lewistown by the Daughters of Jesus is progressing rapidly. Subscriptions covering the greater part of the estimated cost of $20,000 have already been made and the hospital will soon be completed.——It has been determined to open a union hospital in Butte in the near future. A building at Broadway and Columbia Street is reported to have been purchased at a cost of about $10 000, and the building, when fitted up, will accommodate about 40 patients.

NEW YORK.

Measles Epidemic.—A canvass of Suffern and Sloatsborough, Rockland County, shows that there are at present more than 200 cases of measles in these towns.

Insanity on the Increase.—The seventeenth annual report of the state commission in lunacy shows that the whole number of insane committed in public and private hospitals during the year was 27,406. The net increase in all institutions for the year was 545. The number discharged, including transfers, was 6,065. The entire number of deaths was 2,017.

Wants Tuberculosis Statistics.—Because of the fact that more deaths occur from tuberculosis than are reported to the health department, the health commissioner has sent out notices to all physicians of Buffalo calling attention to the city ordinance, which states that all cases of tuberculosis must be reported and that failure to report constituted a misdemeanor punishable by fine.

Too Few Institutions.—At a session of the State Board of Charities, which was held at Rochester, Dr. William L. Russell said that the state had not enough institutions for the care of the feeble-minded. There were at present 2,500 who need such institutional treatment and for whom no provision is made by the state. The enlargement of the institution at Rome was suggested as well as that at Newark. Places of retention pending examination are also needed, as it is still common to keep people in jails and lockups for days. Dr. Robert B. Lamb gave an address on "Mental Defect and Crime." He showed the fallacy of the comon belief that insanity was made a plea for the purpose of securing a shorter term of imprisonment, as this class of criminals were usually detained in hospitals for the insane longer than they would be in prison. Surgeon Thomas W. Salmon, U. S. P. H. and M.-H. Service, spoke on "The Relation of Immigration to the Prevalence of Insanity in New York State."

New York City.

Personal.—Dr. M. Boland, Long Island State Hospital, Brooklyn, has been appointed junior assistant physician to the Hudson River State Hospital, Poughkeepsie.——Dr. A. M. Skeen has been appointed assistant physician at the State Custodian Asylum, Rome.

New Hospital Opened.—The Jewish Hospital for Deformities and Joint Diseases, at 915 Madison Avenue, was formally opened November 4. The hospital is the outgrowth of a dispensary opened two years ago by Dr. Henry W. Frauenthal at Fiftieth Street and Lexington Avenue.

Bequests.—By the will of the late Mary L. Cassidy, who died October 14, bequests amounting to almost a million dollars were made to religious and charitable institutions. Among these are the Lying in Hospital, New York City, $86,000; the New York Home for Incurables, $86,000, and the New York Society for the Crippled, $153,670.

New Hospital Sunday Plan.—The board of trustees of the Hospital Saturday and Sunday Association announces that it has been authorized by two persons to say that they would duplicate all gifts above $100,000 to the extent of $5,000. Isaac Guggenheim has since anounced that he will duplicate all gifts above $105,000 to the extent of $5,000.

Academy Anniversary.—November 15 being the fifty-ninth anniversary of the Academy of Medicine, the usual discussion of a serious subject gave way to one of interest to the laity as is the custom on these occasions. Dr. Roswell Park of Buffalo gave a talk on "Medicine and Surgery in Classic Art and Satire," which was illustrated by more than one hundred lantern slides taken from the masters of art, both ancient and modern. The lecture was followed by a reception.

Board of Health Criticised.—The committee on supplies has made a report to the board of education criticising the board of health for performing surgical operations on public school children during the school session, as several riots have been caused in this way. A resolution was offered requesting the board of health to have such operations performed after school hours.

The New Water Supply.—The Nyack *Evening Sun* states that the new water supply of New York City will cost more than the estimated cost of the Panama canal. The new reservoir, situated in the Catskills, will be 12 miles long, 2 miles broad and of a uniform depth of 160 feet. Fifty billion gallons of water will be delivered daily, and there will be a gravity force sufficient to carry the water to the eighth story of buildings at the Battery.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended November 10, 319 cases of tuberculosis, with 163 deaths; 290 cases of diphtheria, with 39 deaths; 138 cases of typhoid fever, with 20 deaths; 84 cases of scarlet fever, with 3 deaths; 57 cases of measles, with 2 deaths; 31 cases of whooping-cough, with 6 deaths; 10 cases of cerebrospinal meningitis, with 10 deaths, and 36 cases of varicella, making a total of 965 cases, with 243 deaths.

Will Keep Seaside Home Open.—At the fortieth annual meeting of St. John's Guild it was announced that the Seaside Home at New Dorp, Staten Island, with accommodations for 125 would be kept open during the winter as a home for convalescent women and children. During the summer a total of 38,392 women, children and babies were given outings by St. John's Guild. In addition to the $20,000 appropriated by the city, more than $60,000 was donated, mostly in small amounts.

Tuberculosis Congress.—The American International Tuberculosis Congress and the Medicolegal Society of New York held a joint meeting at the Hotel Astor November 15 and 16. A resolution was passed recommending the creation of a new cabinet office, that of "secretary" or "commissioner of public health," and it was further recommended that this officer should be given adequate authority and means to accomplish the desired ends in suppressing tuberculosis, and that where state boards of health exist authority should be given them to formulate and enforce a code of regulations for preventing the ravages of tuberculosis. The following officers were elected for the ensuing year: President, Dr. Clifford H. Irion, president of the State Board of Health of Louisiana; vice-presidents, Drs. George R. Tabor of the State Board of Health of Texas; Charles Wood Fassett, St. Joseph, Mo.; Francis T. B. Fest, Las Vegas, N. M.; William F. Drewry, Petersburg, Va.; James W. McDonald, Fairmont, W. Va.; and secretary and treasurer, Dr. Matthew M. Smith, Austin, Texas. A chairman was appointed in each state to form a committee to coöperate in agitation for state and municipal sanatoria for the treatment of tuberculosis.

NORTH CAROLINA.

To Raise Standard of Education.—Two measures of interest to the North Carolina profession will come up for action at the forthcoming session of the state legislature: First, the enlargement of the state hospitals for the insane until accommodations sufficient for the care of all the insane of the state is provided. At present there are said to be at least 2,000 uncared for except in jails and in county homes. Second, the matter of the entrance examinations of students for the study of medicine. The general average of rejections before the State Board of Medical Examiners ranges from 30 to 40 per cent. It has been urged by the board that almost all the individuals are men unfitted to enter the study of medicine because of deficient preliminary education. It is urged that with proper entrance examinations, the number of rejections could be decreased materially by having the poorly prepared student enter another department of study prior to matriculation in medicine. The faculties of the medical colleges are reported to be in favor of the measure of elevating the standards of requirements, and will coöperate in effecting this much-needed reform.

OHIO.

Trachoma in Toledo.—Trachoma is reported to be prevalent on the east side of Toledo, in a district inhabited chiefly by Sicilians and Hungarians.

Scarlet Fever.—Scarlet fever is reported to be epidemic in Marion township, but in mild form. The public school at Addison has been ordered closed on account of scarlet fever in the village.

State Board Reorganized.—The State Board of Health has been reorganized at Cincinnati by the election of Josiah Hartsell, Ph.D., Canton, as president and Dr. Charles O. Probst, Columbus, secretary.

Woman's Medical Club.—The Woman's Medical Club of Columbus, has been organized with Dr. Marinda E. Blackburn, president; Dr. Susannah L. Bryant, vice-president, and Dr. Ida M. Wilson, secretary-treasurer.

Medical Library Opened.—The addition to the Cleveland Medical Library, 222 Prospect Street, was opened with a reception October 27, at which Dr. Abraham Jacobi, New York City, delivered the principal address. The library at present possesses 15,000 volumes and has a capacity for 30,000.

Typhoid Fever.—At Kettlerville, near New Bremen, 9 cases of typhoid fever are reported.——Dr. Horton, Columbus, who was sent by the State Board of Health to investigate the typhoid fever outbreak at Kenton, reports that the city water and the water from private wells fail to show any contamination.——Minster is reported to have a typhoid fever epidemic with 60 cases and 20 deaths.

Campaign Against Irregulars.—The campaign of the Cleveland *News* against the irregular practitioners and "healers" is already showing results. Joseph, the "eye healer," who occupied a suite of rooms in the Pythian Temple, has disappeared on account of the publicity given his methods by the Cleveland *News*. He is said to have been driven out of Buffalo two years ago on account of a threatened sentence of imprisonment.

Diphtheria.—Diphtheria is reported to be on the increase in Cleveland.——An epidemic of diphtheria is feared at Piqua, where a death revealed two concealed cases of diphtheria.——Steubenville reports an epidemic of diphtheria.——During the week ended November 4, 74 new cases of diphtheria with 8 deaths were reported in Cleveland. This is said to be the largest number ever reported in the city.——Diphtheria is reported to be spreading in the village of Delhi, Home City and Fernbank.—The schools in Silverwood district have been ordered closed on account of diphtheria.

Personal.—Dr. William H. Emery, Toledo, has been appointed examiner for the East Side pension board.——Dr. W. Burnett Weaver, Cincinnati, has returned from Europe.——Dr. Odo E. Portman, Canton, returned from Europe October 16.——Dr. Robert B. Meek, Fremont, has been appointed jail physician, vice Dr. O. A. Hess, resigned.——Dr. George Stockton has been re-elected superintendent of the Columbus State Hospital.——Dr. Arthur G. Helmick, Gallipolis, has been appointed night physician at the state penitentiary, vice Dr. J. Garfield Alcorn.——Dr. A. Per Lee Pease, Massillon, expects to sail for Hawaii, Samoa and New Zealand, December 6.——Dr. James T. Hanson, superintendent of the Athens State Hospital, is reported to be seriously ill.

OKLAHOMA.

Hospital Notes.—The Shawnee Hospital Association has been incorporated with a capital stock of $25,000 by Drs. Joseph M. Trigg, F. L. Carson, Joseph R. Shive, John H. Scott and Walter G. Bradford.

Communicable Diseases.—Several cases of scarlet fever are reported among the school children of Ponca City.——Many children have been withdrawn from the schools of Kingfisher on account of the prevalence of diphtheria.——Chandler is reported to have an epidemic of diphtheria. Up to the present time 11 cases have been reported, and the county health officer has forbidden any public meetings to be held until the malady has run its course.

Control of Eleemosynary Institutions.—At a recent meeting of the Council of the Oklahoma State Medical Association, it was decided to attempt to secure a clause in the new constitution for the state which shall include certain ideas or principles set forth by the council. The principles advocated are that the control of all eleemosynary institutions in the state should be divorced from partisan politics; that members of the medical profession are better qualified to judge of the competency of those who should be in control of such institutions than are the ordinary state officials; that medical associations, both state and county, are non-partisan and free from political bias, and that the aggregate professional interest in the good conduct of such institutions would be the best guarantee of their patriotic action in recommending medical men for positions in such state institutions and on the State Board of Health and Board of Medical Examiners. The third suggestion is that the government of the eleemosynary institutions should be under the general supervision of a board of control, to be elected by the people, and that, while this board should have the appointment of physicians for the various positions, "such board should be confined to the appointment of physicians out of a given number of physicians duly recommended therefor by the Oklahoma State Medical Association, and that there should be a State Board of Health and a State Board of Medical Examiners, the members of both of which boards should be appointed by said board of control under similar recommendations from the Oklahoma State Medical Association, and that county boards of health should be appointed by, and under the control of, the State Board of Health." Physicians and others interested in seeing that the state institutions, well and humanely kept, are urged to use their influence on the members of the constitutional convention, to see that the principles outlined are adopted in the new constitution.

PENNSYLVANIA.

Personal.—Dr. Jacob L. Ziegler, Mount Joy, celebrated his eighty-fourth birthday November 17. Dr. Ziegler is said to be the oldest graduate of Jefferson Medical College and has been practicing medicine 63 years.

Illegal Practitioner Yields.—M. S. Kuhn, who has been practicing medicine for several years in Mount Pleasant, was reported to the district attorney by the Scottdale Medical Society as an illegal practitioner. The district attorney thereupon gave this individual twenty-four hours to discontinue practice and remove his signs, and this he did within the time limit. This shows a continuation of the good work done by this society in abating the nuisance of illegal practice.

Philadelphia.

Mütter Lecture.—The Mütter lecture for 1906 will be given in the hall of the College of Physicians, December 4, at 8:30 p. m., by Dr. William J. Mayo, Rochester, Minn., on "Principles Underlying Surgery of the Stomach and Other Viscera."

Hospital Ordinance Approved.—The ordinance to purchase for $267,000, 890 acres of ground at Byberry as a site for a home for the indigent and hospital for the insane, was favorably passed on by councils, November 15, and the ordinance was approved by the mayor.

Bequests.—By the will of the late Jane Hutchinson $3,000 is bequeathed to the Medico-Chirurgical Hospital to endow a memorial bed to bear the name of the donor. It also devises $500 to the Home for Incurables and $500 to the Home of the Merciful Savior for Crippled Children.

Institutions to Benefit by Charity Ball.—At a meeting of the executive committee of the twenty-seventh annual charity ball, to be given Jan. 30, 1907, the following institutions were chosen as beneficiaries: The children's surgical ward of the hospital of the University of Pennsylvania; the Maternity Hospital of Jefferson Medical College; the Children's Aid Society, and the Polyclinic Hospital.

Health Report.—The total number of deaths for the week ended November 17 aggregated 473, an increase of one over the number reported last week and an increase of 66 over the number reported in the corresponding period of 1905. The principal causes of death are as follows: Typhoid fever, 20; measles, 4; whooping-cough, 2; diphtheria, 8; consumption, 60; cancer, 26; diabetes, 4; apoplexy, 28; heart disease, 41; acute respiratory disease, 76; enteritis, 27; cirrhosis of the liver, 6; Bright's disease, 27; accidents, 13, and marasmus, 9. There were 224 cases of contagious diseases reported, with 31 deaths, as compared with 236 cases and 35 deaths reported in the previous week.

Personal.—Dr. S. Wier Mitchell delivered the graduating address to the nurses of the Orthopedic Hospital at the annual commencement exercises, held November 16.——Dr. R. E. Doolittle, chief chemist of the government laboratory at the port of New York, delivered an address, November 15, before the chemical section of Franklin Institute on "Inspection of Imported Food Products."——Drs. Ernest M. Dorset and Milton F. Percival were reported by the civil-service commission to Director Coplin, November 12, as the only candidates who passed for the position of resident physician at the Municipal Hospital.——Dr. Hugh Howard Riddle will sail this month for England, where he will reside permanently.

Health and Charities for 1907.—Dr. W. M. Late Coplin, director of the department of health and charities, submitted to the councils' committee on health and charities the budget for the department for 1907. This asked for an appropriation of $955,722, as compared with $848,555 appropriated during the present year. The budget provides for the erection of a municipal ice plant at a cost of $45,000; enlargement and improvement of the Nurses' Home (Philadelphia Hospital), $20,000; and alterations and refurnishing for the care of consumptives of old wards at the Philadelphia Hospital formerly used for the treatment of nervous diseases. The item for abating nuisances is increased from $20,000 to $40,000, and that for special sanitary inspections from $1,000 to $5,000. Dr. Coplin also recommends increases in the salaries of employés in the different bureaus and equalization of salaries. The force of cattle and meat inspectors he recommends shall be increased from 6 to 25, at $1,000 each. Among the new positions recommended is that of assistant chemist for the health bureau, with a salary of $1,000.

SOUTH DAKOTA.

Defendant Wins.—The damage suit for $10,000 brought by Mrs. Alice Jones against Dr. Frank S. Howe, Deadwood, for alleged malpractice in the treatment of a Colles fracture, has been decided in favor of the defendant, the presiding judge refusing to allow the case to go to the jury and scoring the plaintiff severely for bringing suit with no medical testimony whatever. The defendant presented expert testimony showing that the treatment was correct and that the case was one of malingering for the purpose of blackmail.

Hospital Notes.—The St. Joseph's Hospital, Mitchell, was dedicated with appropriate ceremonies and opened for patients, November 15. The building is constructed of compressed brick, is thoroughly built and modern in every way, has accommodation for 15 patients, and a large operating room and a training school for nurses in connection. It was built by the Benedictine Sisters at a cost of $30,000.——St. Luke's Hospital is being constructed in Fargo under the auspices of the Lutheran Hospital Association. The building will cost about $30,000 and will accommodate about 40 patients.

GENERAL.

Dr. Osler to Visit America.—Dr. William Osler, Oxford, England, will sail for America, November 28, to visit Toronto, Baltimore and other cities.

Railway Surgeons Meet.—The Surgical Association of the Rock Island Lines will hold its fourth annual meeting in Hot Springs, Ark., December 5 and 6.

Cuban Yellow Fever.—Six new cases of yellow fever are reported in Havana and four in the provinces during the previous week, according to a telegram, November 20. From November 1 to 10, inclusive, nine cases occurred in Havana, but no deaths were reported in that period, indicating that the fever is of a mild type. U. S. health officers think that practically all the cases are being found.

An Index Pathologicus.—Americans are taking the lead in organizing an international association of medical museums to catalog specimens and enable duplicates to be exchanged or specimens loaned. The curator of the Army Medical Museum at Washington, Assistant Surgeon James Carroll, is chairman of the committee in charge of the task, and at the meeting of the British Medical Association at Toronto presented an official communication asking for coöperation and outlining the plans of the proposed association of museum representatives. Honorary memberships for prominent pathologists are a feature of the plan.

FOREIGN.

A Model Public Hospital.—The town of Pankow, in Germany, has just completed a noteworthy general hospital at an expense of 6,500 marks ($1,625) per bed. In order to keep the mild and severe cases separate there are no large wards and only six beds to a room. Another innovation is an arrangement by which CO_2 is piped to the bath tubs, the supply regulated merely by a faucet. The total number of beds is between 100 and 200.

New Medical Council in Turkey.—According to the Constantinople correspondent of the *Lancet*, a new medical council has been established in that city under the name of "Conseil d'Instruction Médicale" and under the presidency of Prof. Mazhar Bey. The duties of this council will be to watch over the sanitary situation of the Ottoman Empire, to inspect and to direct the management and operations of the administration of the civil service of medicine, and to attend in general to the advancement of medical science.

Australian Diploma of Public Health.—According to the *British Medical Journal*, the University of Sydney will grant a special diploma in public health. The diploma will testify to the candidate's proficiency in all the branches of study, scientific and practical, which are necessary for the proper performance of the duties of a medical officer of health. The examination is to be in two parts, one relating to the general principles of sanitary science; the other relating to state medicine and to the appliances of pathology and sanitary science to public health.

Medicaster.—The proprietor and editor of a medical journal in Germany, the *Aerztl. Centralanzeiger*, were recently sued by a manufacturing chemist, Bauer, because they had referred to him editorially as a "medicaster." He manufactures djocat, a remedy for diabetes, and they were protesting against his advertising methods. The courts decided in favor of the defendants, stating that the term medicaster is not an insulting one, but means a person practicing medicine without being duly licensed. Our English dictionaries define the term as "an ignorant physician, a quack." The costs of the proceedings were imposed on the chemist.

Improvements at the Calcutta Hospitals.—Great improvements are reported at the Calcutta hospitals. The new quarters for nurses at the Eden and Medical College hospitals are completed and will provide every necessary comfort. Electric lights and fans are installed. Altogether 96 European and Eurasian (principally Eurasian) nurses are to be provided for. The new surgical ward at the Medical College Hospital, soon to be opened, is expected to be the best of its kind in India. The operating theater and its appliances will be of the latest and best description. A new lecture room is to be erected also. The native wards of the hospital are to be furnished with electric fans.

Addition to London Temperance Hospital.—The foundation stone of a new out-patient department for the London Temperance Hospital was laid on October 25. The addition will provide a waiting hall for 200 patients, various consulting and examination rooms, and dispensary and store room, and a small theater for minor operations. It is, however, only part of a larger scheme, which, when completed, will furnish isolation accommodation and observation wards, a clinical laboratory, a museum and a lecture room for nurses. To carry out the entire plan about $125,000 will eventually be required, but only about $55,000 is needed for the first portion with which alone for the present it is proposed to deal.

Nobel Prize to Golgi and Ramon y Cajal.—One of the Nobel prizes this year is to be divided between Ramon y Cajal of Madrid and Golgi of Pavia. The prize thus goes to the men who have led the way in the study of the finer structure of the nervous system. C. Golgi has been professor of general pathology at Pavia since 1871, and is now 62 years old. Ramon y Cajal is 54, and has been professor of anatomy at Valencia, Barcelona and Madrid since 1881. He is the son of the former professor of anatomy at Saragossa. He was awarded the city of Moscow prize at the International Medical Congress at Paris in 1900, and the Helmholtz medal of the Prussian Academy of Sciences in 1905. He visited America in 1899 to deliver a lecture at Clark University, Worcester, Mass. The Moscow prize of $1,000 is awarded triennially to the author "whose works have contributed most to the progress of medical science." The Nobel prize is $40,000.

The Mecca Pilgrimage.—The annual pilgrimages of "the faithful" to Mecca have always been an interesting spectacle to the outside world, and great efforts have been necessary to prevent their proving a source of widespread epidemics of disease as the thousands of pilgrims return to their widely scattered homes. According to the *Semaine Méd.* for October 24, especially stringent measures are being prepared for this year, on account of the recent small epidemic of plague at Djeddah. A medical mission has been sent there, consisting of 6 physicians, 3 disinfectors and 6 sanitary police. The pilgrims leaving Djeddah for Mecca have to pass through the quarantine station and be examined and their goods disinfected. Pilgrims arriving at other ports are sent on to Mecca without delay, the commission in charge of the sanitary measures for the pilgrimage recommending that large numbers of camels and other means of transportation be provided to hasten the arrival at Mecca. The pilgrims are to be supplied at the ports with distilled water sufficient for their daily consumption. The pilgrims are all examined at the midway medical station, half way on the route to Mecca, and the suspects are sent to Djeddah. The pilgrims are examined again on their arrival at Mecca, where an isolation hospital is to be established. They are further to be kept under medical supervision for five days after their arrival.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Nov. 10, 1906.

An Expensive Handshake.

A woman has recovered $12 compensation from a man for injuries caused by shaking hands with him. When taking leave he gripped her hand so tightly that she screamed. This he treated as a joke and went away laughing. She consulted a physician who found that her little finger was fractured. She had to have the hand in splints for three weeks.

Deaths in India Due to Wild Animals.

During the past year, 2,054 persons were killed by wild animals in India and 21,797 by snakes. Elephants killed 48, lepers 401, tigers 786 and wolves 153. In the Bombay province and in the central provinces lancets designed for the treatment of snake bite with permanganate of potassium have been freely issued. In several cases the treatment is said to have been successful. The number of cattle destroyed by wild animals rose to 92,277. The number of wild animals destroyed amounted to 16,915.

Death Under Chloroform in a Dentist's Chair.

The danger of administering chloroform in the upright position is once again illustrated. A woman, aged 31, went to a dentist to have 14 or 15 teeth extracted. A physician administered chloroform sprinkling it on a mask. When she appeared to be going under the influence the respiration and circulation suddenly stopped. The usual methods of resuscitation were adopted without success. Before the administration the patient's heart was examined and found to be healthy. But the necropsy showed that it was dilated and fatty. The patient was obese and had suffered much from indigestion.

Increasing Plague Mortality in India.

For several weeks plague mortality in India has been steadily rising. For the week ending September 22, 6,436 cases and 4,945 deaths were reported. The present season is that of the annual recrudescence. As in previous years, the Bombay presidency leads the way. The city of Poona has recently passed through one of the most terrible outbreaks that have occurred anywhere in India. The population of 111,000 is supposed to be reduced to 50,000, owing to the exodus of nearly all but the poorest people. During one week the mortality was at the rate of nearly 300 per 1,000 and on one day 175 deaths were recorded.

Opening of New Building of University College Hospital.

The Duke of Connaught opened the new building of University College Hospital which has been erected by the generosity of the late Sir Blundell Maple, who gave $1,000,000 for the purpose. The style of the building is free treatment of renaissance. The material is red brick with terra cotta dressings. The plan of the main buildings is cruciform, and this form is retained in each of the wards and secures to the patients a maximum amount of sunshine. The wards are roomy and lofty and contain 24 beds each, there being about 300 beds in all. Each ward is strictly isolated in accordance with the plan of the late Dr. Moore and is connected with the central block by a covered bridge with windows admitting a free supply of air. Since the erection of the new building a gift of $500,000 has been made by Sir Donald Currie for the erection of a school of advanced medical studies and a home for students attending midwifery cases.

Food Adulteration.

The thirty-fifth annual report of the Local Government Board shows that adulteration of food is very prevalent. With the object of avoiding detection tradesmen often supply genuine articles to strange customers while they supply adulterated ones to customers they know. Thus while the proportion of adulterated samples obtained by the latter amounted to only 8.2 per cent. in the case of articles obtained by private persons it amounted to 39 per cent. Milk continues to be the chief article subject to adulteration. The rate of adulteration for the whole country in 1898 was reduced to 9.9 per cent., but in none of the subsequent years did it fall below 10 per cent. The extent of adulteration must be much greater than this, for many of the samples submitted are very close to the official limits and far below good milk. As to butter, there are on the market cheap substances invented by foreign chemists which when mixed with genuine butter do not appear to be capable of detection by any known process of chemical analysis.

Pharmacology

VIN MARIANI.

Official Report by Council on Pharmacy and Chemistry—With Comments.

This preparation was assigned to a subcommittee of the Council and the following is an abstract of the report of the committee:

Samples of Vin Mariani and of the literature distributed by the manufacturers were examined.

It appears that the beverage or medicine known as "Vin Mariani" is a preparation of red wine, apparently imported from Bordeaux, and fortified, in this country, by an alcoholic preparation of coca leaves or other parts of the coca plant.

The committee considered, first, the character of the red wine as imported. A sample received from the port of New York, March 10, 1905, from Henry Clausel & Co., Bordeaux, and consigned to Mariani & Co., on analysis was found to have the following composition:

Specific gravity		0.9959
Alcohol by volume	per cent.	10.00
Extract	per cent.	2.279
Volatile acids	per cent.	0.0914
Ash	per cent.	0.2801
Reducing sugar		trace.
Pol. direct	degrees	—0.8
Pol. invert.	degrees	—0.7
K_2SO_4	Mg. per liter	0.092

A sample of Vin Mariani, as bought in the open market in an original package, has also been analyzed and found to have the following composition:

Specific gravity		1.0125
Alcohol by volume	per cent.	16.15
Extract	per cent.	8.602
Ash	per cent.	0.277
Glycerin	per cent.	0.444
Volatile acids	per cent.	0.0747
Tartaric acid	per cent.	0.2400
Alkaloids (coca bases)	per cent.	0.0250
Cane sugar	per cent.	2.35
Reducing sugar	per cent.	3.38

The increased alcoholic strength of Vin Mariani over the Bordeaux wine, from which it is made, as shown by this analysis, doubtless comes from the alcohol extract containing the coca bases, as already stated. Approximately 6 per cent. of sugar is also added to the wine. Judging from the analysis, therefore, Vin Mariani corresponds to a mixture of an alcoholic preparation of coca leaves and ordinary Bordeaux red wine, with the addition of about 6 per cent. of sugar.

Vin Mariani conflicts with Rule 5, which requires that "no article will be admitted or retained, concerning which the manufacturer or his agents make misleading statements as to geographical source, raw material from which made, or method of collection, or preparation," by stating in the advertising literature that: "The United States government, under the Pure Food Law of March 3, 1903, further emphasizes all previous analyses of Vin Mariani by admitting Mariani's wine as absolutely pure and unadulterated."

Whatever may have been the intent of the above statement, its effect is to deceive. The conjunction of the terms "Vin Mariani" and "Mariani's wine" can only be construed as meaning the same thing. Inasmuch as it does not appear that Vin Mariani is imported into this country, it would not have been possible for the United States government to inspect it and as to the wine obtained from Henry Clausel & Co., from Bordeaux, it is not in any sense Mariani's wine except that of ownership. It is the opinion of the committee that this phrase can only result in deception and the construction of the language strongly favors the supposition that it is intentionally meant to deceive.

This false claim is practically repeated in the other pamphlets published by the Vin Mariani Company, although not always in the same words.

This preparation also conflicts with Rule 6, which states that "No article will be admitted or retained of which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to therapeutic value," in that the firm's letter-heads have printed on them the following:

"Vin Mariani purifies the blood stream, strengthens the circulation, stimulates muscular fiber and nerve tissue, is a respiratory stimulant, strengthens the heart muscles, and is an emergency food in the absence of all other nutriment. Successfully employed as an adjuvant in anemia, debility, diseases of the chest, nervous troubles, muscular or mental overstrain, neurasthenia, and allied conditions, and in certain cases of protracted convalescence."

The committee believes that Vin Mariani is intended as a beverage rather than as a medicine.

The report concludes:

"The committee recommends, therefore, that Vin Mariani be refused recognition and that this report be published in full or in part."

In accordance with this recommendation the above abstract of the report is herewith published.

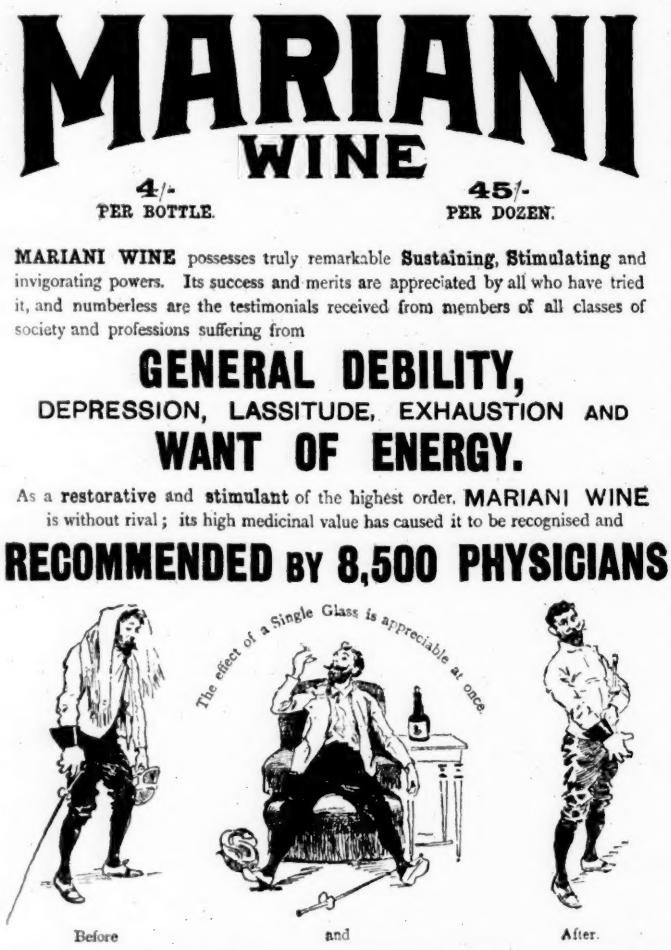
W. A. PUCKNER, Secretary.

VIN MARIANI MADE IN THIS COUNTRY.

According to the above report, Vin Mariani as imported is simply an ordinary cheap French wine, the preparation sold in this country as Vin Mariani being compounded in this country. Yet the advertising literature, the label on the bottle, etc., state directly or indirectly that it is a French preparation. Until recently—presumably until the vendors realized that the truth regarding this point would come out—the advertisements in medical journals contained an analysis made by a chemist in Paris. The shape of the bottle, the character of the printed matter accompanying the bottle, etc., are evidently intended to convey the impression that it is imported. So far then as this point is concerned, Vin Mariani is sold under gross misrepresentations and is a fraud.

ADVERTISED TO THE PUBLIC.

Vin Mariani was at one time advertised to the public in this country, but, so far as we know, it is not at the present time; at least, not directly. Yet it is most effectively advertised to the public indirectly, and this with little expense to the promoters, the cost of the circular around the bottle being the only expense—doctors who prescribe it do the rest. If those who are in the habit of prescribing Vin Mariani will examine the advertising that goes into the hands of their patients, they will realize how true it is that our profession is responsible for much of the "patent medicine" taking. Few laymen could withstand the temptation to buy the stuff for any ailment that comes along when they read in the circular that this "medicine," which their doctor evidently thinks is a good thing, is so highly recommended, for all the ills that befall us mortals, by the Pope of Rome, the Czar and the Czarina of Russia, the Queen of England, the Shah of Persia, the King of Norway and Sweden, the Queen of Portugal, the Queen of Saxony, the Crown Prince of Cambodia, Ferdinand of Bulgaria, and by a whole list of ambassadors, generals, politicians, musicians, actresses, etc. The testimonials of these great men and women are enough to convince the most skeptical that this remarkable medicine will do everything but raise the dead—and under favorable circumstances accomplish even this. And still more—it will win battles! Witness this from the governor-general of Madagascar: "We were refreshed by Vin Mariani, and before morning carried the stronghold." Alexandre Dumas and Emile Zola are credited with calling it "the elixir of life." One very strange thing about the testimonials in the circular used in this country is that all are written by foreigners. But Americans (President McKinley—think of it!—among others) are honored by having their testimonials quoted in the circulars used on the other side of the Atlantic. Why? Is it possible that the testimonials are fakes?


MARIANI
WINE
4/- PER BOTTLE.
45/- PER DOZEN.
MARIANI WINE possesses truly remarkable Sustaining, Stimulating and invigorating powers. Its success and merits are appreciated by all who have tried it, and numberless are the testimonials received from members of all classes of society and professions suffering from
GENERAL DEBILITY,
DEPRESSION, LASSITUDE, EXHAUSTION AND
WANT OF ENERGY.
As a restorative and stimulant of the highest order, MARIANI WINE is without rival; its high medicinal value has caused it to be recognised and
RECOMMENDED BY 8,500 PHYSICIANS
The effect of a Single Glass is appreciable at once.
Before
and
After.
THE BEST AND SUREST
TONIC * RESTORATIVE
Delivered free from Wilcox, 49, Haymarket, S.W., or of all Chemists and Stores.

[The above is the first page of a four-page circular accompanying the bottle of Vin Mariani as sold direct to the public in England.]

AN ETHICAL CURE-ALL.

Here are a few of the conditions that the circular says Vin Mariani is good for: "Anemia, winter cough, debility, vocal weakness, la grippe, continued fevers, bronchitis, nervous troubles, muscular weakness, diseases of the aged, malaria, melancholia, overwork, neurasthenia, impotence, malnutrition, depression, heart troubles, wasting diseases, mental overstrain, and in certain cases of protracted convalescence."

The following quotations are taken from blotters—circulated in this country—which are evidently intended for the laity, as well as for physicians:

"Vin Mariani creates and sustains vigor and energy. Guards against wasting diseases. When everything else has failed try it to prove merits."

"Lung, Throat and Stomach Troubles benefited by Vin Mariani; this Ideal French tonic strengthens entire system of Body, Brain and Nerves."

"Most Efficacious, Most Agreeable, Unequaled by anything in Fortifying, Strengthening, Refreshing."

WHY BLAME THE LAYMAN FOR USING NOSTRUMS?

Can we blame the layman for using peruna, wine of cardui, etc., simply because they are advertised, when there are physicians who, for the same reason, prescribe concoctions that are just as quackish and just as useless? And can editors of medical journals consistently find fault with newspapers for carrying advertisements of fraudulent "patent medicines" when they themselves admit to their pages advertisements of nostrums that are no less fraudulent and of no more value?

MEMBER OF PROPRIETARY ASSOCIATION.

One word more: There is an organization known as the Proprietary Association of America, but it is usually referred to in common parlance as the "patent-medicine" men's association. It will be remembered that last year we printed a list of the members of this body, among which was the Vin Mariani Company. It will be remembered also that in the list were the names of certain firms who were supplying medicines to physicians, but practically all these resigned from membership and their resignations were published by us. We have not had the pleasure of publishing the resignation of the Vin Mariani Company. On the contrary, we note that at the last

annual meeting of the "patent-medicine" men's association this firm was still an active member, Mr. A. L. Jaros, who stands for the Mariani Company in this country, being one of those who registered at the meeting.

Correspondence

A County Bacteriologist.

ST. PAUL, Oct. 30, 1906.

To the Editor:—I notice in an editorial in THE JOURNAL, October 27, page 1382, that Ontario County, New York, is thought to have been the first county to appoint a county bacteriologist. The date of this appointment does not appear, but St. Louis County, Minnesota, I think, antedates Ontario County, New York, so far as I can judge from the editorial. In July, 1905, an agreement was entered into between the Minnesota State Board of Health and the city of Duluth by which the former was to establish a laboratory in said city. The control of this branch laboratory is entirely under the State Board of Health. The country district contiguous to Duluth felt that it should have the benefit of this laboratory, and a request was made of the county commissioners of St. Louis County that it enter into negotiations with the State Board of Health and arrange that this branch laboratory should serve the entire county. This matter was taken up and the branch laboratory extended its work to the entire county, beginning with Jan. 2, 1906. H. M. BRACKEN.

[We learn from the editor of the *Medical Times* that the bacteriologist did not begin work in Ontario County until some time after the date mentioned above in the case of St. Louis County, Minnesota. Hence Dr. Bracken's contention is correct.—ED.]

Marriages

ALLEN W. URMSON, M.D., New Castle, Pa., October 30.

MARVIN PIERCE RUCKER, M.D., to Miss Josie McRae, both of Manchester, Va., November 3.

WILLIAM NEAVITT PALMER, M.D., to Miss Nellie Alice Gott, both of Hinton, W. Va., October 24.

HERBERT HARRIS, M.D., Fredericksburg, Va., to Mrs. Emma Gilson of Syracuse, N. Y., October 31.

FREDERICK KENAN, M.D., to Miss Charlotte Maxwell, both of Upper Sandusky, Ohio, November 7.

CALEB WILLIAM SOMMERVILLE, M.D., to Miss Flora B. Kaestner, both of Philadelphia, November 10.

GEORGE R. PENNINGTON, M.D., Fillmore, Mo., to Miss Grace Handley of St. Charles, Mo., recently.

CARLOS D. LANE, M.D., Waterloo, Ind., to Miss Faye Belle McDonald of Auburn, Ind., October 31.

ROBERT L. GRAY, M.D., Philadelphia, to Miss Ellen Moore Cheetham of Reading, Pa., November 8.

BAIRD URQUHART BROOKS, M.D., Durham, N. C., to Miss Annie Louise Sills, at Baltimore, October 24.

CLINTON ELLIS RUTTER, M.D., Northumberland, Pa., to Miss Annie Sheef of Williamsport, Pa., November 7.

JAMES CORNELIUS AUSTIN, M.D., Spencer, Mass., to Miss Agnes Duggan of Worcester, Mass., November 7.

BRACE WHITMAN PADDOCK, M.D., to Miss Elizabeth Kellogg Plunkett, both of Pittsfield, Mass., November 8.

RAYMOND GRISWOLD TAYLOR, M.D., Los Angeles, Cal., to Miss Jessie Frances Lawton of Long Beach, Cal., November 7.

NORMAN GLASGOW GOHLSON, M.D., Holly Springs, Miss., to Miss Eliza McNeel Penick, at Lexington, Va., November 1.

LIEUTENANT FRED W. PALMER, M.D., U. S. Army, Fort Bayard, N. M., to Miss Marie Riordan of Los Angeles Cal., November 7.

ALBERT ALONZO DAVIDSON, M.D., Augusta, Ga., to Miss Linda Minta Richardson of Tullahoma, Tenn., at Nashville, Tenn., October 10.

Deaths

James Theodore Reeve, M.D. Castleton (Vt.) Medical College, 1864; Jefferson Medical College, Philadelphia, 1855; a member of the American Medical Association; formerly president of the Wisconsin State Medical Society, the Fox River Valley Medical Society and the Appleton Medical Club; president of the Outagamie County Medical Society; for 19 years secretary of the Wisconsin State Board of Health; assistant surgeon of the Tenth Wisconsin Volunteer Infantry; surgeon of the Twenty-first Wisconsin Volunteer Infantry and later brigade surgeon and division surgeon, during the Civil War, and a prisoner in Libby Prison, Richmond, Va.; a member of the first public library board of Appleton and for many years its secretary; one of the most prominent practitioners of Wisconsin; the oldest surgeon of the Chicago & Northwestern Railway in that state, died at his home in Appleton, November 4, after a long illness, aged 72.

Charles G. Jenkins Finn, M.D. Bellevue Hospital Medical College, New York City, 1876; a member of the Medical Society of New York, New York Academy of Medicine, Associated Physicians of Long Island, Long Island Railway Surgeons Association, president of the New York and New England Association of Railway Surgeons; chief surgeon to St. Giles Summer Hospital, Hempstead; consulting surgeon and physician to the Children's Home, Mineola, N. Y.; chief surgeon of the New York and Long Island Traction Co.; associate surgeon to St. Mary's Hospital, Jamaica; division surgeon Long Island Railroad; for ten years secretary and treasurer and three years president of the Queens County Medical Society, died at his home in Hempstead, N. Y., November 3, from cerebral hemorrhage, after an illness of two days, aged 51.

George W. Matthews, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1895; who practiced in Philadelphia until 1899, when he was commissioned captain and assistant surgeon of volunteers and assigned to duty with the Thirty-sixth Infantry; was honorably discharged on Oct. 12, 1900; was commissioned major and surgeon of volunteers in November of the same year and discharged June 30, 1901; was commissioned as assistant surgeon in the regular establishment Oct. 3, 1900, and was retired with the rank of captain on account of disability incurred in line of duty Oct. 2, 1905, and was given a medal of honor for bravery while on duty in the Philippine Islands, died at the home of his father in Worcester, Mass., August 5, from amebic dysentery, after an illness of four years, aged 31.

David Henry Hazen, M.D. University of Georgetown, Medical Department, Washington, 1873; a member of the American Medical Association, Medical Association of the District of Columbia and Medical Society of the District of Columbia; resident physician at the Washington Asylum for two years and of the Naval Hospital, Washington, for a similar period; contract surgeon in the Army and on duty at Washington arsenal for four years; a member of the board of education of Washington from 1890 to 1900; one of the best known physicians of Washington, died at his home in that city, November 6, from diabetes, aged 60.

Joseph B. Matthews, M.D. Medical College of Virginia, Richmond, 1896; of Greensboro, who had been released on bail pending an appeal to the United States Supreme Court as to his sanity, but who had been pronounced sane and guilty of the murder of his wife by poison and sentenced to 20 years' imprisonment in the penitentiary, is reported to have died from the effects of a gunshot wound of the skull inflicted with suicidal intent, at Baltimore, Md., November 5.

Thomas H. Mackin, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1900; resident physician at the St. Joseph's Hospital, Reading, for one year; treasurer of the Reading Medical Association, died suddenly from heart disease in his office in Reading, October 29, aged 29. At a special meeting of the Reading Medical Association resolutions were adopted deploring the untimely death of Dr. Mackin.

Harvey Oliver Milton, M.D. Jefferson Medical College, Philadelphia, 1855; formerly of Chattanooga, Tenn.; assistant surgeon of the Fourth and Fifteenth Alabama Infantry, C. S. A., during the Civil War, died at the home of his son in Knoxville, Tenn., November 7, from cerebral hemorrhage, after an illness of three days, aged 73.

Harry Heth Rodman, M.D. College of Physicians and Surgeons in the City of New York, 1895; formerly of New York City; who had been ill for a long time from chronic headaches,

is reported to have committed suicide, by shooting himself through the head at his home in Buffalo, N. Y., November 12.

George Edgar Allen, M.D. Boston University School of Medicine, 1887; a veteran of the Civil War; a member of the board of education of Youngstown, Ohio, for two terms, died at his home in Youngstown, November 5, from locomotor ataxia, after an illness of more than 20 years, aged 68.

Charles Vose Bemis, M.D. Harvard University Medical School, Boston, 1839; one of the oldest graduates of Harvard University and of its medical department; for several years a trustee of the Massachusetts General Hospital, died at his home in Medford, Mass., November 6, aged 90.

Jeremiah C. Wilson, M.D. Castleton (Vt.) Medical College, 1855; a member of the Michigan legislature in 1866; at one time president of the village of Rochester, Mich., died at his home in Rochester, November 3, from spinal sclerosis, after an illness of two years, aged 78.

Robert C. Craig, M.D. University of Virginia, Department of Medicine, Charlottesville, 1896; of Pittsburg; who had been suffering from neurasthenia, is reported to have committed suicide in Atlantic City, November 14, by shooting himself through the heart, aged 31.

Richard T. Higgins, M.D. Jefferson Medical College, Philadelphia, 1867; of Vandalia, Ill.; once a member of the Illinois legislature, and a colonel on the staff of Governor Tanner, died in Springfield, Ill., November 14, two days after a surgical operation, aged 65.

Timothy Stanton Crowley, M.D. Jefferson Medical College, Philadelphia, 1849, one of the oldest practitioners of Philadelphia, and one of the founders of the Physicians' Mutual Aid Society, died at his home in that city, November 7, aged 83.

Harry E. Estey, M.D. University of the State of Oregon, Medical Department, Portland, 1906; interne in the Good Samaritan Hospital, Portland, died in that institution from typhoid fever, after an illness of three weeks, October 27, aged 23.

Thomas Latané, M.D. Franklin Medical College, Philadelphia, 1848; for many years a practitioner of King and Queen County, Virginia, died at his home in Stevensville, Va., August 10, from senile debility, after an illness of one year, aged 82.

Corneille B. Strother, M.D. University of Virginia, Medical Department, Charlottesville, 1897; formerly a practitioner of Albany, Ga., died from tuberculosis at his home in Albuquer-que, N. M., October 30, after a long illness, aged 32.

Nicholas Gibbs Dail, M.D. Atlanta (Ga.) Medical College, 1860; one of the most highly respected physicians of Grainger County, Tenn., died at his home in Powder Springs, September 30, from uremia, after an illness of three days, aged 79.

Samuel M. Lane, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1886; a member of the American Medical Association; formerly of Limerick and Royersford, Pa., died in Silver Springs, N. M., October 30.

Llewellyn Sessions, M.D. Medical College of Georgia, Augusta, 1845; one of the oldest practitioners of Union Springs, Ala., died at his home in that place, November 5, after an illness of more than two years, aged 82.

Isaac Edward Styker, M.D. Northwestern Medical College of St. Joseph, Mo., 1883, died at his home in Lawton, Okla., November 9, during an operation necessitated by a collision between a train and his carriage, November 6.

George W. Townes, M.D. Kentucky School of Medicine, Louisville, 1867; circuit clerk of Muhlenberg County for four years, died at his home in Greenville, November 8, from paralysis, after an illness of two years, aged 72.

George S. Miller, M.D. Rush Medical College, Chicago, 1867; one of the oldest practitioners of Jo Daviess County, Illinois, died at his home in Hanover, November 9, from nephritis, after an illness of several months, aged 65.

John N. Gilmore, M.D. New York Medical College, New York City (licensed 1878); a member of the American Medical Association, died at his home in Gaston, Ala., September 17, from hypertrophy of the heart, aged 79.

Olin L. Jenkins, M.D. New York Homeopathic Medical College and Hospital, New York City, 1876; formerly mayor of Plainfield, N. J., died suddenly at his home in that city, November 13, from heart disease, aged 60.

Clarence W. Spring, M.D. Harvard University Medical School, Boston, 1884; a member of the Fitchburg Medical Club and Worcester North Medical Society, died recently and was buried in Pittsburg, Mass., November 5.

Edwin James Wulff, M.D. Medico-Chirurgical College of Philadelphia, 1904; who had gone to Utah for his health, died from acute pneumonia at his home in Myton, Utah, August 10, after a short illness, aged 27.

William J. Brunner, M.D. New York University, New York City, 1879; a member of the American Medical Association, died suddenly at his home in New York City from heart disease, November 8, aged 52.

Edward R. Lang, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1871; of Cove, Ore., died at Walla Walla, Wash., November 4, after an illness of two years, aged 58.

Richard B. Baker, M.D. University of Maryland School of Medicine, Baltimore, 1846; said to have been the oldest practitioner of Hickory, N. C., died at his home in that place from paralysis, aged 86.

Ira W. Disbro, M.D. Homeopathic Hospital College, Cleveland, 1876; died at his home in Cleveland, November 7, from the effects of injuries received two years ago in a street-car wreck, aged 53.

Clark R. Wilcoxson, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1894, died at his home in Ypsilanti, Mich., November 13, from tuberculosis, aged 36.

Leander D. Stockton (Examination, Ohio), a well-known practitioner and banker of Carrollton, Ohio, died suddenly at his home in that place, October 29, from heart disease, aged 68.

Robert B. Cloud, M.D. University of Louisville, Medical Department, 1892; local surgeon for the Southern Railway Co., died at his home in Austell, Ga., November 2.

Dana A. Locke, M.D. Chicago Homeopathic Medical College, 1886, died at his home in Potterville, Mich., October 27, from cerebral hemorrhage, after a short illness, aged 68.

William A. Ball, M.D. Toronto University Medical Faculty, 1894, died at his home in Toronto, from heart disease, November 3, after an illness of six months, aged 38.

John S. Guisinger, an old practitioner of southern Ohio, died at his home in Pemberton, October 21, from pneumonia, after an illness of two weeks, aged 90.

Samuel H. Gordon, M.D. Medico-Chirurgical College of Philadelphia, 1898, died at his home in Newark, N. J., November 10, from acute gastritis, aged 35.

William Hobson, M.D., an eclectic practitioner of Conway Springs, Kan., died suddenly while making a professional call in that place, November 4.

Franklin H. Harne, M.D. College of Physicians and Surgeons, Baltimore, 1880, died at his home in Bethlehem, Pa., November 1, aged 65.

Lewis B. Mitchell, M.D. University of Nashville, Medical Department, 1858, died at his home in Brinkley, Ark., November 8, aged 78.

Hiram Jefferson Wells, M.D. University of Nashville, Medical Department, 1854, died at his home in Nashville, November 3, aged 71.

William Shafer, M.D. Jefferson Medical College, Philadelphia, 1884, died at his home in Camden, N. J., November 9, aged 55.

E. Howe Davis, M.D. Albany (N. Y.) Medical College, 1852; died at his home in Elmira, N. Y., November 3, aged 88.

Deaths Abroad.

James Finlayson, M.D., LL.D., F.F.P.S., Glasg., physician to the Western Infirmary, Glasgow, died unexpectedly at Glasgow from apoplexy, aged 65. Born in Glasgow, he was educated at the university, where he had a brilliant career, taking the degree of M.B. with honors. In 1875 he was appointed physician to the Western Infirmary, and in 1883 physician to the Royal Hospital for Sick Children. He was a successful physician, an excellent teacher and a prolific writer. His best known work was his "Clinical Manual," published in 1878, which reached three editions in England and two in America under the title of "Clinical Diagnosis." He wrote the article on "Diagnosis" in Keating's "Cyclopedia of the Diseases of Children"; an "Account of the Life and Works of Maister Peter Lowe, the Founder of the Faculty of Physicians and Surgeons, Glasgow," and an "Account of the Life and Works of Dr. Robert Watt, Author of the Bibliotheca Britannica." His contributions to the medical journals were voluminous, amounting to about 150. He was much respected both by his colleagues and fellow-citizens, and his highly critical judgment was valued and sought in difficulties. He had none of the rhetorical powers of the great systematic lecturers of former days, but his teaching was thorough, both scientifically and practically. He was no great believer in large classes and

huge laboratories for students, but thought that individual attention from the teacher was the great essential. Apart from medicine he was a man of wide culture, interested in literature, archeology and theology. After the retirement of Sir William Gairdner he was the leading consultant in Glasgow and the west of Scotland. He was unmarried.

F. Roncati, **M.D.,** formerly professor of psychiatry and director of the insane asylum at Bologna, Italy, died early in October, bequeathing his property to the asylum. It is proposed to remodel it and give it his name, and to erect a tablet to his memory in the city hall, as he always took a prominent part in the administration of the affairs of the city and province.

A von **Rothmund, M.D.,** professor of ophthalmology at Munich until he retired at the age of 70, died October 27, aged 76. The *Münch. med. Wochft.*, No. 31, 1900, contained an excellent biographical sketch, with his portrait and a list of his principal works.

Queries and Minor Notes

ASKS INFORMATION CONCERNING SANITARIUM.

NORTH ADAMS, MASS., Oct. 26, 1906.

To the Editor:—I wish to obtain information concerning a sanitarium for the treatment of drug habits, conducted, I think, by Catholic monks in Canada. GEORGE A. FAGAN, M.D.

WANTS INSTITUTION FOR WEAK-MINDED CHILDREN.

Dr. E. E. Bevington, New Paris, Ohio, asks if any reader of THE JOURNAL can recommend to him a private institution for weak-minded children.

EUCALYPTUS TREES AND MALARIA.

PEARSON, MD., Nov. 15, 1906.

To the Editor:—Are there any who believe that *Eucalyptus globulus* planted near a house or marsh exerts an antimalarial influence, and are *Eucalyptus coccifera* and *gummi* supposed to act in the same way if planted near a marsh? Very respectfully,

A. L. HODGDON.

ANSWER.—The planting of groves of eucalyptus to ward off malaria has not been successful in the opinion of most observers. A conspicuous example is cited by A. Celli (Malaria, 1900) in the case of Tre Fontana, which continues to be an intensely malarial locality in spite of the fact that there is a fine grove of these trees there. Similar views are expressed by Marchiafava and Bignami in the Twentieth Century Practice of Medicine, Vol. XIX. In fact, the presence of trees near a house is regarded as prejudicial because they are likely to harbor great numbers of insects. Scheube, however, says (Diseases of Warm Countries, 1903, p. 159): "As the smell of eucalyptus trees and castor-oil plants is said to keep off mosquitoes, it may be well to plant some near the dwelling on the chance of their doing so."

EASY LESSONS IN POLISH.

SPRINGFIELD, MASS., Nov. 3, 1906.

To the Editor:—Is there a Polish work published whereby a physician can learn enough of the language to get along with Polish patients? If there is such a book kindly give me publisher's name and address. M. L. SLUTSKIN, M.D.

ANSWER.—The only book of the kind in English and Polish of which we can learn has been long out of print. There are a number of phrase books and guides to conversation for Germans wishing to obtain a smattering of Polish. Those who understand German will find very useful a little pamphlet costing 55 cents, published by B. Behr's Verlag, Steglitzerstrasse, Berlin W. 35. The work is entitled "Leitfaden der polnischen und deutschen Sprache," by Forster and Fischer. Perhaps some of our readers may be able to give further information that may interest physicians who do not speak Polish but who have Polish patients.

TREATMENT OF INTRACAPSULAR FRACTURE OF FEMUR.

———, ILL., Nov. 5, 1906.

To the Editor:—What is the "Maxwell treatment" of intracapsular fractures of the femur and what results are claimed for it? R. N. L.

ANSWER.—Maxwell's treatment of intracapsular fractures of the femur consists in the application of extension in two directions, longitudinally and laterally, in opposition to the displacing forces. He describes the method as follows: "Longitudinal extension is applied in the usual way by adhesive strips running along the sides of the thigh and the leg, beyond the foot to which the weight is suspended. Lateral extension is applied by placing a strip of muslin, 5 inches wide, around the thigh as closely to the body as possible, the patient being on his back. A splint should be adjusted to the inner aspect of the thigh to keep the lateral extending band from cutting. The pulley at the side should be placed opposite the crest of the ilium and about 4 inches above so that the lateral extension will act as relates to the body, outward, slightly forward and upward. Counter extension is secured by making the body perform the duty. The bed is elevated at the foot, the side corresponding with the fracture, one foot; the other 8 inches; the head post on the fractured side (the side on which the pulley is attached), 4 inches. In cases of fracture of the right thigh, the body will gravitate toward the left-hand head post, being in opposition to the two extending forces. In this way we bring the two fragments in nearly and as accurately in coaptation as we can in any other fracture of the femur, and they are as easily maintained in that position. The rough and jagged surface of the fractured neck is carried away from the inner surface of the capsule and ceases to fret and irritate it, thereby to a large extent removing the cause of inflammation of the joint, which is an important factor in the causes that defeat union. The inner surface of the capsular ligament rendered tense by lateral extension is made to apply itself closely to the sides of the neck, and in that way gives support to the plastic callus. Weight sufficient for longitudinal extension (about 14 pounds) should be applied, the leg brought down to its normal length as determined by measurement and comparison with the uninjured one. A steady pull on the side extension band will soon bring the hip to its proper fullness. By comparison it will be quite easy to determine when the trochanter is as prominent as the well one. Eight or nine pounds will maintain it in that position until the irritability of the muscles subsides, when both weights may be gradually diminished to one-half or less." Dr. Maxwell claims for this method better coaptation of the fractured ends; greater comfort to the patient, and as good results as are obtained by other methods of fixation.

The Public Service

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Nov. 17, 1906:

Loving, Robert C., asst.-surg., ordered to proceed from Newport News, Va., to West Point, N. Y., and report to the Superintendent, U. S. Military Academy, for duty.

Bevans, James L., asst.-surg., detailed to duty with Provisional Government, Havana, Cuba.

Church, James R., asst.-surg., detailed to duty with Provisional Government, Havana, Cuba.

Bartlett, C. J., asst.-surg., granted fourteen days' leave, beginning about November 2, with permission to visit the United States.

Smart, Robert, asst.-surg., will, in addition to his other duties, give medical attention to the 17th and 18th Batteries Field Artillery, during the absence of Captain Bartlett, asst.-surg.

Cowper, H. W., asst.-surg., ordered to proceed from Camp Columbia, to Calbarien, Cuba, for duty.

Richards, R. L., asst.-surg., relieved from duty at Calbarien and ordered to Santa Clara, Cuba, for duty.

Stone, John H., asst.-surg., relieved from duty with 11th Cavalry, Camp Columbia, and ordered to Matanzas, Cuba, for duty.

Duval, Douglas P., asst.-surg., relieved from duty at Matanzas and ordered to Camp Columbia, Cuba, for duty.

Miller, E. W., asst.-surg., relieved from duty at Camp Columbia and ordered to Santa Clara, Cuba, for duty.

Webb, Walter D., asst.-surg., ordered to proceed from Camp Columbia to the United States and report in person to the Surgeon General, U. S. Army.

Hansell, H. S., asst.-surg., relieved from duty at Camp Columbia, and ordered to Bejucal, Havana, for duty.

Patterson, R. U., asst.-surg., will, in addition to his other duties, give medical attendance to the Second Battalion, Engineers, Camp Columbia, Havana, Cuba, during the illness of Captain Morrow, asst.-surg.

Manly, C. J., Baker, David, Steer, Samuel L., asst.-surgs., ordered to proceed to Havana, Cuba, and report in person to the commanding general, Army of Cuban Pacification, for assignment to duty.

Hallock, H. M., surgeon, left Madison Barracks, N. Y., *en route* to New York City for medical treatment.

Snyder, Henry D., surgeon, left Fort Sam Houston, Texas, on detached service with troops *en route* to Fort Reno, O. T.

Duncan, William A., asst.-surg., on expiration of leave of absence to report to medical superintendent of Army Transport Service, San Francisco, for duty.

Foster, Charles L., asst.-surg., relieved from duty in the Army Transport Service, and to report to the commanding general, Department of California, for assignment to duty at Army General Hospital, Presidio, San Francisco.

Eastman, William R., asst.-surg., relieved from duty at Army General Hospital, Presidio, San Francisco, Cal., and ordered to Fort Lawson, Wash., for duty.

Hess, Louis T., asst.-surg., relieved from duty at Fort Lawton, Wash., and ordered to Fort Porter, N. Y., for duty.

Love, Albert G., Jones, Harold W., asst.-surgs., relieved from temporary duty in the Department of California, and will proceed on the first available transport sailing from San Francisco to the Philippine Islands, and on arrival at Manila will report to the commanding general, Philippines Division, for assignment to duty.

Glennan, James D., surgeon, detailed as a member of the examining board at Fort Monroe, Va., during the absence on leave of Major W. Fitzhugh Carter, surgeon.

Gapen, Nelson, asst.-surg., left Columbus Barracks, Ohio, with troops to Presidio of Monterey, Cal.

Russell, F. F., asst.-surg., relieved from duty at the Presidio of San Francisco, and will repair to Washington, D. C., and report in person to the Surgeon General of the Army for temporary duty.

Brown, Wilmont E., contract surgeon, left Fort Walla Walla, Wash., on leave of absence for three months.

Ashburn, James K., contract surgeon, left Fort Lincoln, N. Dak., on leave of absence.

Hammond, William G., dental surgeon, left Fort Logan, Colo., on leave of absence for one month.

Craig, Emmett J., dental surgeon, granted an extension to his leave of absence to include Dec. 4, 1906.

Miller, William G., contract surgeon, granted leave of absence for one month.

Slayter, John T. H., contract surgeon, ordered from San Francisco to Fort William Henry Harrison, Mont., for duty.

Hughes, Michael E., contract surgeon, arrived at Newport News, Va., on leave of absence for four months from the Philippines Division.

Mills, Frederick H., contract surgeon, relieved from further duty in the Philippines Division, and on the transport *Ingalls*, and ordered from Newport News, Va., to Fort Assinniboine, Mont., for duty.

Adair, George F., contract surgeon, left Fort Washington, Md., and arrived at Fort Wadsworth, N. Y., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Nov. 17, 1906:

Edgar, J. M., surgeon, to U. S. R. S. *Wabash*, Navy Yard, Boston.

DeBruler, J. P., P. A. surgeon, detached duty in the Bureau of Med. and Surgery, Navy Department, and duty at the Naval Medical School Hospital, Washington; to the *Paducah*.

Gardner, J. E., medical inspector, detached U. S. R. S. *Wabash*, Navy Yard, Boston; to home and wait orders.

De Lancy, C. H., P. A. surgeon, detached *Paducah*; to the U. S. R. S. *Hancock*, Navy Yard, New York.

Manchester, J. D., P. A. surgeon, detached U. S. R. S. *Hancock*, Navy Yard, New York; to Naval Hospital, Naval Home, Philadelphia.

Geiger, A. J., P. A. surgeon, detached Naval Hospital, Mare Island, Cal.; to Naval Station, Guam.

Zalesky, W. J., asst.-surgeon, orders of October 31, 1906, modified, when detached *Newport* to U. S. T. B. *Stringham*, for duty with Third Torpedo Flotilla.

Brooks, F. H., asst.-surgeon, to Naval Hospital, Mare Island, Cal.

Angeny, G. L., surgeon, detached Naval Hospital, Naval Home, Philadelphia; to Naval Station, Guam.

Johnson, M. K., surgeon, detached U. S. S. *Iowa;* home and wait orders.

Crandall, R. P., surgeon, detached duty U. S. R. S. *Hancock* to *Georgia*.

Leach, Philip, surgeon, when discharged treatment Naval Hospital, New York, to duty on the U. S. R. S. *Hancock*.

Shook, F. M., asst.-surgeon, detached duty Navy Yard, Mare Island, and to duty at the Naval Hospital, Mare Island, Cal.

Means, V. C. B., surgeon, detached duty at Naval Recruiting Station, San Francisco; to duty at Navy Yard, Mare Island, Cal.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Oct. 31, 1906:

Eager, J. M., assistant surgeon-general, granted leave of absence for fourteen days, from October 26, 1906.

Stoner, Geo. W., surgeon, directed to proceed to Charleston, S. C., for special temporary duty, upon completion of which to rejoin his station at Ellis Island, N. Y.

Carmichael, D. A., surgeon, granted leave of absence for sixteen days, from November 14.

Brooks, S. D., surgeon, detailed as inspector of unserviceable property at San Diego Quarantine Station.

Williams, L. L., surgeon, granted leave of absence for seven days, from October 30, under Paragraph 189 of the Regulations.

Blue, Rupert, P. A. surgeon, directed to report to the Bureau for instructions relative to the inspection of certain stations of the service in the State of Virginia.

Grubbs, S. B., P. A. surgeon, granted leave of absence for one day, Oct. 30, 1906.

Anderson, J. F., P. A., surgeon, leave of absence granted for one month, from November 5, amended so as to be effective Oct. 29, 1906.

Willis, C. W., P. A. surgeon, directed to proceed to Scranton, Miss., for special temporary duty, upon completion of which to rejoin his station at Gulf Quarantine Station.

Stimson, A. M., asst.-surgeon, granted leave of absence for seven days, from Oct. 29, 1906, under Paragraph 191 of the Regulations.

Collins, G. L., asst.-surgeon, directed to proceed to Norfolk, Va., for special temporary duty, upon completion of which to rejoin his station at Cape Charles Quarantine Station.

Frost, W. H., asst.-surgeon, relieved from duty on U. S. Revenue Cutter Chase and assigned to duty at the Revenue-Cutter Service School of Instruction, Arundel Cove, Md.

McCormac, J. T., acting asst.-surgeon, granted leave of absence on account of sickness for thirty days, from September 17.

Thornton, M. J., acting asst.-surgeon, granted leave of absence for fourteen days, from November 7.

Wetmore, W. O., acting asst.-surgeon, granted leave of absence for six days, from October 24.

Richardson, S. W., pharmacist, granted leave of absence for four days from October 24, under provisions of Paragraph 210 of the Regulations.

APPOINTMENT.

George K. Kepler appointed pharmacist of the Third Class, effective from date of oath.

BOARDS CONVENED.

A board of medical officers was convened to meet at Washington, D. C., on Nov. 5, 1906, for the physical examination of officers of the Revenue-Cutter Service. Detail for the board: Assistant Surgeon-General W. J. Pettus, Chairman; Asst.-Surgeon-General J. W. Kerr, Recorder.

A board of medical officers was convened to meet at San Francisco, Cal., on Nov. 1, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue-Cutter Service. Detail for the board: Surgeon H. W. Austin, Chairman; Asst.-Surgeon F. H. McKeon, Recorder.

A board of medical officers was convened to meet at Seattle, Wash., on Nov. 1, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue-Cutter Service. Detail for the Board: Asst.-Surgeon H. G. Ebert, Chairman; Acting Asst.-Surgeon F. R. Underwood, Recorder.

LIST OF CHANGES FOR SEVEN DAYS ENDED NOV. 14, 1906.

Geddings, H. D., asst.-Surgeon-general, directed to proceed to Ellis Island, N. Y., for special temporary duty, on completion of which to rejoin his station.

Stoner, G. W., surgeon, granted leave of absence for three days from Nov. 7, 1906, under Paragraph 189 of the Regulations.

Gassaway, J. M., surgeon, granted extension of leave of absence for five days.

Cofer, L. E., P. A. surgeon, granted leave of absence for one month and eight days from Nov. 21, 1906.

Goldberger, Joseph, P. A. surgeon, granted leave of absence for twenty-one days, to be taken en route from Mexico City to Washington, D. C.

Amesse, J. W., P. A. surgeon, granted extension of leave of absence for five days.

Steger, E. M., asst.-surgeon, directed to report to the medical officer in command, Ellis Island, N. Y., for duty.

Spratt, R. D., asst.-surgeon, granted leave of absence for one month and ten days from Dec. 6, 1906.

Frost, W. H., asst.-surgeon, granted leave of absence for one day, Nov. 4, 1906.

Long, H. D., asst.-surgeon, temporarily relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington, D. C., for temporary assignment to the Government Hospital for the Insane.

Frick, John, acting asst.-surgeon, granted leave of absence for thirty days, From Dec. 1, 1906.

Safford, M. V., acting asst.-surgeon, granted leave of absence for ten days, from Nov. 9, 1906.

Straw, E. E., acting asst.-surgeon, granted leave of absence for ten days from Oct. 15, 1906.

Walker, T. Dyson, acting asst.-surgeon, leave of absence granted for ten days from Oct. 18, 1906, amended to read for eight days from Oct. 23, 1906.

Walker, R. T., acting asst.-surgeon, granted leave of absence for five days from Nov. 25, 1906.

White, R. C., acting asst.-surgeon, granted leave of absence for thirteen days from Sept. 28, 1906, on account of sickness.

Rogers, Edward, pharmacist, temporarily relieved from duty at Stapleton, N. Y., and directed to proceed to Washington, D. C., for temporary duty.

Scott, E. B., pharmacist, granted leave of absence, without pay, for thirty days, from Nov. 7, 1906.

Keen, Walter H., pharmacist, granted leave of absence for thirty days, from Dec. 1, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Nov. 16, 1906:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, Oct. 27-Nov. 3, 1 case.
Illinois: Galesburg, Nov. 3-10, 15 cases.
Indiana: South Bend, Oct. 27-Nov. 10, 16 cases.
Iowa: Farley, Oct. 10-Nov. 12, 14 cases.
Louisiana: New Orleans, Nov. 3-10, 5 cases.
Maine: Bangor, Nov. 10, 3 cases.
Nebraska: Omaha, Oct. 24-31, 1 case.
North Carolina: Greensboro, Oct. 27-Nov. 3, 1 case.
Ohio: Findlay, Oct. 27-Nov. 3, 1 case, imported.
Wisconsin: Appleton, Oct. 27-Nov. 3, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, Sept. 22-Oct. 6, 16 cases.
Brazil: Bahia, Sept. 29-Oct. 13, 5 cases; Rio de Janeiro, Sept. 30-Oct. 14, 3 cases.
France: Paris, Oct. 13-27, 6 cases.
Greece: Athens, Oct. 6-13, 1 death.
India: Bombay, Oct. 9-16, 2 deaths; Calcutta, Sept. 29-Oct. 6, 4 deaths.
Russia: Moscow, Oct. 6-20, 4 cases, 1 death; Odessa, 12 cases, 1 death; St. Petersburg, Sept. 29-Oct. 13, 6 cases, 2 deaths.
Spain: Barcelona, Oct. 21-31, 5 deaths; San Feliu de Guixols, Oct. 20-27, 1 death.
Turkey: Constantinople, Oct. 14-21, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Sept. 30-Oct. 13, 2 cases, 2 deaths.
Cuba: Cruces, Nov. 12, 3 cases; Cuevitas, Nov. 7, 1 case; Havana, Nov. 10-14, 5 cases; Santa Clara, Nov. 12, 1 case.
Nicaragua: Managua, Oct. 6-13, 1 death.

CHOLERA.

India: Bombay, Oct. 9-16, 6 deaths; Calcutta, Sept. 29-Oct. 6, 20 deaths; Madras, Oct. 6-12, 14 deaths; Rangoon, Sept. 29-Oct. 6, 2 deaths.

PLAGUE.

Australia: Cairns, Sept. 8-15, 2 cases.
Austria: Trieste, Nov. 12, present.
Brazil: Bahia, Sept. 29-Oct. 6, 1 case; Rio de Janeiro, Sept. 30-Oct. 13, 14 cases, 8 deaths.
India: General: Sept. 29-Oct. 6, 7,301 cases, 5,832 deaths; Bombay, Oct. 9-16, 54 deaths; Calcutta, Sept. 29-Oct. 6, 9 deaths; Rangoon Sept. 15-Oct. 6, 107 deaths.

Medical Education and State Boards of Registration.

COMING EXAMINATIONS.

MISSOURI State Board of Health, Kansas City, November 26-28. Secretary, J. A. B. Adcock, Warrensburg.

NEW MEXICO State Board of Health, Santa Fe, December 3. Secretary, Dr. B. D. Black, Las Vegas.

PENNSYLVANIA State Medical Examining Board, Industrial Hall, Philadelphia, December 4-7. Secretary, Dr. Joseph E. Willetts, Pittsburg.

WYOMING Board of Medical Examiners, State Capitol, Cheyenne, December 5. Secretary, Dr. S. B. Miller, Laramie.

DELAWARE State Medical Society Examining Board, Dover, December 6, and by the Homeopathic Board at Wilmington on same date. Secretary of the Medical Council, Dr. P. W. Tomlinson, Wilmington.

OHIO State Board of Medical Registration and Examination, Columbus, December 11-13. Secretary, Dr. Geo. H. Matson, Columbus.

IOWA State Board of Medical Examiners, Office of State Board of Health, Des Moines, December 11-13. Secretary, Dr. J. F. Kennedy, Des Moines.

VIRGINIA Medical Examining Board, Richmond, December 11-14. Secretary, Dr. R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, 847 N. Eutaw St., Baltimore, December 12. Secretary, Dr. J. McP. Scott, Hagerstown.

CALIFORNIA State Board of Medical Examiners, San Francisco, December 18. Secretary, Dr. Chas. L. Tisdale, Alameda.

OKLAHOMA Board of Medical Examiners, Guthrie, December 26. Secretary, Dr. J. W. Baker, Enid.

South Carolina Reciprocity.

COLUMBIA, S. C., Nov. 10, 1906.

To the Editor:—Please state in THE JOURNAL that the South Carolina State Board of Medical Examiners does not reciprocate with the Ohio board or the New Jersey board.

W. M. LESTER, M.D., Secretary.

Illinois July Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, July 11-13, 1906. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 76, of whom 66 passed and 9 failed, and one did not complete the examination. The following colleges were represented:

PASSED. College,	Year Grad.	Per Cent.
Bennett Med. Coll., Chicago	(1906)	77, 85
Dearborn Med. Coll. (1906), the grades of 75 and 77 were reached by one each, 78 and 79 by three each, 86 by two, 81 by five, 82 by four, 83, 84, 85 and 89 by one each.		
Hahnemann Med. Coll., Chicago	(1905) 78; (1906)	83, 86
Hering Med. Coll.	(1905)	79
Harvey Med. Coll.	(1905)	80
Jenner Med. Coll.	(1906) 76, 80, 81,	81, 84
National Med. University	(1906) 77,	78, 80
Northwestern Univ. Med. School	(1905) 83; (1906) 82,	86, 91
College of P. & S., Chicago	(1905) 78; (1906) 78, 79, 80,	84
Rush Med. Coll.	(1903) 83; (1905) 87; (1906)	95
Michigan Coll. of Med. & Surg.	(1891)	82
Baltimore Med. Coll.	(1906)	79, 83
University of Michigan, Coll. of Med.	(1903)	91
Barnes Med. Coll., St. Louis	(1906)	75, 75
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	76, 79, 82
College of P. & S., St. Louis	(1906)	75, 78, 88
Washington University, St. Louis	(1906)	83
University of Pennsylvania	(1906)	85
Jefferson Med. Coll.	(1906)	78, 88

FAILED.		
Bennett Med. Coll., Chicago	(1906)	72
Dearborn Med. Coll.	(1906) 67, 71,	72, 74
Harvey Med. Coll.	(1899)	56
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	74
Barnes Med. Coll.	(1905)	74
College of P. & S., St. Louis	(1906)	72

Rules Governing Examinations in Nebraska.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, sends us the following, governing the examination for license.

1. An examination is required before a license is granted to practice medicine in Nebraska. The law requiring such procedure went into effect Aug. 1, 1903. Reciprocity is permitted.

2. Each applicant is required to fill and acknowledge application blank furnished by the board. The affidavit must be corroborated by the exhibition of his diploma.

3. Each applicant, if he graduated after Aug. 1, 1898, must show proof that he has attended four full courses of lectures at a recognized medical college, no two courses being in the same year.

4. Each applicant, if he graduated after Aug. 1, 1891, and prior to Aug. 1, 1898, must show proof that he has attended three full courses of lectures at a recognized medical college, no two courses being in the same year.

5. Applicants who graduated at a recognized medical college prior to Aug. 1, 1891, must show proof of having attended two full courses of lectures.

6. A fee of $25.00 must be paid on filing the application for examination, except that for graduates of medical colleges located in Nebraska the fee is $10.00. The fee is not returnable in case of failure to pass or non-appearance for examination.

7. Examinations are always in charge of one or more members of the State Board of Health.

8. Each candidate is known by his number, which is arranged as follows: Envelopes are numbered and each contains a blank bearing the corresponding number of which the applicant writes his name and address, this completed blank is returned by the applicant to the envelope and the envelope sealed by him.

9. Each candidate places on his answer papers the number given him; no other marks of identification are allowed on the answer papers.

10. The answer papers are collected and at once sent by express to the member of the board having charge of that subject. Each member examines the answer papers and marks each candidate by placing the marking opposite the candidate's number. These markings are sent to the secretary, who tabulates them and presents the same to the members of the board at a meeting which is held shortly after each examination. When the markings are completed, the envelopes containing the names are opened and these names are placed opposite the corresponding numbers.

11. No dishonest methods are tolerated and any candidate who disregards this rule is debarred from further examination. This rule includes the giving or obtaining of aid.

12. Ten questions are given on each paper, and all subjects for examination are covered by the question papers given.

13. The time allowed for each examination paper shall not exceed two hours.

14. No candidate is allowed to leave the room after the question papers have been distributed until he has completed his answers and delivered the same to the member in charge.

15. The examination is in writing and in the English language.

16. A general average of 75 must be attained. Any candidate failing to secure an average of 75 shall be considered to have failed utterly and shall not be entitled to another examination on that application.

17. Candidates from all schools shall answer in common all questions submitted except the questions on materia medica and practice, which are adapted to the school of practice accepted by the candidate. The answer papers on subjects peculiar to any one school of medicine are sent to the members of this board who are representatives of such school.

18. Candidates shall submit to an examination in the following branches, to-wit: Anatomy, physiology, chemistry, materia medica and therapeutics, practice of medicine, surgery, obstetrics and diseases of women, pathology and such other branches as the board shall deem advisable.

Rules Governing Examinations in Maryland.—Dr. J. McP. Scott, secretary of the Board of Medical Examiners of Maryland, sends us the rules governing the licensing examination in that state. They are as follows:

1. Help of any kind must be removed from the reach and sight of the candidate.

2. The examiner must retain the question papers securely in his own possession. Under no circumstances shall he distribute any examination papers before the exact time arrives for the examination on that particular subject.

3. The time for each examination paper shall not exceed three hours.

4. There shall not be more than eight nor less than six questions to each branch.

5. No candidate shall, under any circumstances, communicate in any way with any other candidate nor have books or helps of any kind. Any candidate violating this rule shall be debarred from that particular examination.

6. At the close of the examination each candidate must subscribe his or her name and postoffice address to the following declaration, constituting a part of the identification card, place the card in the envelope, seal the same and deliver it, with his or her final answer paper, to the secretary:

I, ———— now at the close of this examination, declare that, prior to these examinations, I had no knowledge of the questions to be proposed, and have neither given nor received explanations or other aid in answering any of them.

(Signed) ————

Every set of answers lacking this declaration and signature, however satisfactory in other respects, will be rejected, and in no case can this omission be supplied after the papers have reached the secretary of the Board of Examiners.

7. Any candidate detected in trying to give or obtain aid shall instantly be dismissed from the room, and his or her paper for the entire examination canceled. Likewise will the papers of any one be canceled who is found guilty of violation of the pledge that "explanations or other aid" had been neither given nor received during the examinations.

8. If any candidate withdraw himself or herself, without permission, from the sight of the examiner, his or her examination shall be closed. This rule permits a candidate to withdraw from the room and return only by the consent of the examiner.

9. A correct set of answers to the questions of any one paper shall entitle the candidate to the full mark for that subject, viz: one hundred points. Partial or imperfect answers shall be rated by the examiners in accordance with their degree of fulness and correctness.

10. All examinations shall be written in the English language, in ink, and must show that the applicant has received proper high school or academic education. Evidence of neglected preliminary education will have great influence with the examiners in determining ratings of papers.

Rules Governing Examinations in Illinois.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, sends us a statement of the rules governing the licensing examination in that state, as follows:

1. The examinations of the Illinois State Board of Health are conducted by the secretary, assistant secretary and chief clerk of the board. The members who prepare the questions and grade the answers do not attend the examinations. The identity of the candidate is not known to the examiners. The candidate is known by a number which is given to him.

2. The questions are mimeographed in the office of the State Board of Health, and are taken to the examination in separate sealed packages, to be opened as required for use.

3. No candidate is admitted to the examination, unless he presents a card of admission, which is issued to all who make application within a stipulated time. The rules of the State Board of Health concerning examinations, are printed on the reverse of this card.

4. The secretary is assisted by several monitors—approximately one to every fifteen candidates—who watch the candidates, and see that they comply with the rules of the board. Each candidate is seated at a table by himself. The examinations are conducted on level floors, never in amphitheaters.

5. But one set of questions is given out at a time. The hours allotted for each subject are printed on a poster displayed in the examination room. All papers are taken up at the expiration of the time limit, and all candidates are required to begin the examination in each succeeding subject at the same time.

6. Candidates are required to write on the paper furnished them by the State Board of Health. They are not permitted to have any papers or documents on the table except the examination papers and their photographs and cards of admission. Candidates are required to keep their photographs on their tables, in plain sight, until they are taken up.

7. A candidate is not allowed to leave the room during the examination, unless absolutely necessary, and then only when accompanied by a monitor, who goes with the candidate wherever he goes.

8. All candidates are required to appear in person before the secretary for identification, with a properly certified photograph. This identification takes place at such time during the examination, as the Board may elect, and is sometimes repeated during the examination. The State Board of Health will not examine the papers of a candidate who fails to appear for identification during the examination.

9. No persons excepting the secretary, his assistants and the candidates are allowed in the room during the examination.

After the examination, all papers are taken to the secretary's office, the number given the candidate at the examination is erased and another (serial) number is substituted. After being recorded, the papers are then sent to the members of the State Board of Health for examination and rating.

Rules Governing Ohio Examinations.—Dr. George H. Matson, secretary of the Ohio State Board of Medical Registration and Examination, sends us the following rules observed by that board in conducting examinations. These instructive rules will doubtless interest other examining boards.

1. Questions are submitted and approved by the board at its meeting preceding the examination. They are then sealed until not more than ten days prior to the examination, when the president and secretary have them printed, and again sealed until the hour of examination in the given subject.

2. At the beginning the applicant is given an envelope containing a numbered card on which he writes his name and address, enclosing it in an envelope, which is sealed and placed in custody of the secretary until examination grades are handed in. The number given is used on the examination paper. Under no circumstances does the applicant's name appear on the examination paper.

3. Examinations begin on second Tuesday of June and December, and continue for three days. Examination periods, 8 a. m. to 10:30 a. m.; 10:30 a. m. to 1 p. m.; 2 p. m. to 4:30 p. m.

4. All examinations are in English and written with ink. Paper is furnished.

5. On the first Tuesday of July and January the board submits grades and passes on applicants examined.

6. The examinations consist of the following subjects: Anatomy, physiology, chemistry, materia medica and therapeutics, principles and practice of medicine and pathology, surgery, obstetrics, physical diagnosis, and diseases of women and children. Ten questions are given in each subject.

7. Questions given the applicant are returned with the answers.

8. Explanations of questions and criticism or inspection of the answer papers during the examination are positively prohibited.

9. Applicants are not permitted to communicate with each other, nor to have in their possession any books or helps of any kind, nor to question any examiner concerning questions under consideration. Any applicant violating this rule is debarred from that particular examination.

10. Applicants must be present at the beginning of each period. They must furnish their own pens and holders.

11. An applicant detected in trying to give or obtain aid is instantly dismissed and his papers for the entire work canceled.

12. If an applicant withdraws, without permission, from the sight of the examiner, his examination is closed.

13. At the close of the entire examination each applicant must subscribe his name and number to the following declaration, place it in an envelope, seal the same and deliver it to the secretary: "I, ————, pledge my word and honor, without mental reservation or evasion, that prior to the examination I had no knowledge of the questions to be proposed, and that during the examination just completed I have neither given to nor received from a fellow candidate, or from any other source whatsoever, any information on the subjects treated of in the examinations, and that I have read and fully understand the import of this declaration." Printed forms are supplied for this purpose. Any set of answers lacking this signed declaration is rejected.

14. An average of not less than 75 per cent. entitles the applicant to a license, provided that he has otherwise complied with the law.

Society Proceedings

COMING MEETINGS.

Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Public Health Assn., Mexico City, Dec. 3-7.

PUBLIC HEALTH DEFENSE LEAGUE.

Meeting held in New York Nov. 15, 1906.

MR. AUSTEN G. FOX in the Chair.

In the City of New York, at the Hudson Theater, there was held a conference of public-spirited men and women. The dangers to the public health and morals incident to the indiscriminate sale of so-called "patent medicines," adulterated drugs and impure foodstuffs and like evils are daily coming home to the conscience of the American people. To an extent never before realized, the country is to-day aroused to the enormity of these evils and dangers. The question naturally arises, "What is the public going to do about it?" The charlatan has for years asked that question in insolent defiance; now the public is asking it in response to a feeling that it must do something in self-defense. The conference was called for the purpose of answering this question, "What is the public going to do about it?"

The following compose the conference committee: Dr. Wendell C. Philips, Silas F. Hallock, Dr. Floyd M. Crandall, Dr. Henry W. Cattell, Walter F. C. Tichborne, Albert M. Austin, Dr. Walter Lester Carr, Mr. Howard J. Rogers, Dr. Ernest J. Lederle, Mr. J. M. Rice, Harold P. Brown, Dr. Henry S. Stearns, Livingston Farrand, Rev. J. J. Wynne, Dr. William M. Polk, O. E. Edwards, Gaylor S. White, Dr. Frank Van Fleet, Eugene O'Dunne, Rev. Thomas R. Slicer, Dr. Thomas Darlington, Austen G. Fox, Dr. William L. Browning, Robert E. Belcher, Champe S. Andrews, John S. Cooper.

DR. FRANK VAN FLEET told of the influences at work that brought about the convention, the primary one being the Medical Society of the County of New York. He told of the formation of this medical society and what it had done in punishing violators of the medical law at a cost of about $5,000 a year, together with what the society obtained in the way of fines. During the past six years there have been over 600 prosecutions with over 400 convictions; the expenditure in money over and above what was received in fines was somewhere in the neighborhood of $12,000. They have had to contend with a lack of financial and moral support. The lawyers for the defense said that the society was doing this work for selfish motives; therefore, there was developed a popular prejudice which ought to be overcome. He told of Champe S. Andrews' work as counsel of the society; what he has done with the postoffice authorities in preventing men filling the mails with filthy and obscene stuff which is intended to defile the sanctity of the home. It became necessary to form a national society. Mr. Andrews and he attended a meeting of the wholesale druggists in this city, but were unable to agree on the work or plan of campaign. But they did succeed in interesting one of their number, a wholesale manufacturer, who sent a check for $1,000 to assist in carrying on the work. He advised great care in the selection of members, because they will be called on to urge the enactment of laws for the protection of public health; their greatest activity will not be along the line of public prosecutions and new laws, but in the line of education. They should begin with themselves and then educate the lawyers, judges and the public. He thought it would not be best for the physicians to take too prominent a part in the work, as they are always likely to be charged with self-interest.

MR. AUSTEN G. FOX said that this is a matter of national import. One hundred years ago the County Medical Society was founded in New York City, and this was seventeen years after the first president of the United States was inaugurated in New York City. Those that framed the constitution stated that one of the greatest objects was to secure such a constitution which had for its chief object the promotion of the general welfare. But there can be no general welfare apart from public health and public morality. So this meeting assembled, representing so many different cities or organizations from almost every state in the Union, to carry out one of the primal purposes in the formation of the federal constitution. Good work may be done here and there locally, but to accomplish the object desired requires making this movement of interest to all. No mere resolutions will accomplish anything. It is time for the community to realize the evil that threatens it. Exposures of quacks and quack medicines may put one or two out of business. Laws are needed that will make these offences punishable by fines and imprisonment. The enforcement of criminal laws should not be placed in the hands of a private organization, but the organization can wage the fight to bring the sponsors of these abuses to justice.

PRESIDENT MCGOWAN of the Board of Aldermen, in welcoming the delegates to New York, said that this undertaking should have the hearty coöperation of the people to bring their efforts to a successful issue. Every right-thinking man and woman and child desires good and pure food, good and pure air, good and pure morals. Unless we have all these we can not hope for good citizens; we can not hope for healthy people or a moral nation.

MR. AUSTEN G. FOX said that the great power will be the press, which heretofore has been most recreant in its duty. He felt sure that the newspapers are willing to coöperate. The Federal Government is already at work along the lines they intend to follow. He referred to the noble purposes that actuate the *Ladies' Home Journal and Collier's Weekly*.

MR. CHARLES F. STEWART, a reporter on the Cleveland *News*, told of his experience in getting after the quacks in Cleveland, and what his paper has done in suppressing them. So far as Cleveland is concerned, quacks have been put out of business; firms that have been paying $80,000 a year for postage stamps alone and whose annual business was over $600,000, have been forced to stop work. (See THE JOURNAL, November 10, pages 1568 and 1579.)

MGR. LAVELLE of St. Patrick's Cathedral, speaking for Bishop Farley, assured the conference of the hearty coöperation and sympathy of Bishop Farley, and said that anything that the laity and clergy of the Catholic Church in America can do to help on the crusade will glady be done.

MRS. MARTHA M. ALLEN, head of the Department of Medical Temperance of the W. C. T. U., said that nine years ago at the convention in Buffalo they started their crusade against the use of alcohol in proprietary medicines. At the close of her address some reporters came to her to obtain some facts and she told them of the percentages of alcohol contained in some of the proprietary medicines, and the reporters said they could not publish those facts because it would interfere with the advertising interests of their papers. They would publish nothing on this subject. Mrs. Allen assured the new society of the support of 300,000 women of the United States who will help do their part for the benefit of public health and morals. She said that some of the things they were organized to do they had been trying to do for many years past. They have been criticised for saying so much about beer, with its small percentages of alcohol, and so little about alcoholic medicines. This is simply a misrepresentation. The papers report what they say about beer and not what they say about the medicines. She told of one person who had taken for rheumatism over 12,000 bottles of Hostetter's bitters during a period of thirty years. She also called attention to instances she knew of drunkenness being caused by taking peruna and other "patent medicines."

On motion, the following resolutions were adopted:

WHEREAS, Medical quacks and charlatans, by their outrageous practices, are continually robbing their helpless victims and undermining the public health, and

WHEREAS, Many manufacturers of so-called "patent medicines" are debauching the public health and morals by the sale of alcohol and narcotics and many dangerous poisons under the guise of medicines, and by following the most pernicious customs and practices in the conduct of their business and the exploitation of the public, and

WHEREAS, Many manufacturers of drugs and food substances are persistently treating their wares with harmful adulterants and other vicious substances, to the great detriment of health and danger to life, and

WHEREAS, Many newspapers entering American homes contain alluringly false advertisements of adulterated foods, and vicious patent medicines, and criminal quacks and charlatans; now, therefore, be it

Resolved, By the conference of delegates from religious, professional, charitable, philanthropic and public welfare societies, in convention assembled at the Hudson Theater, New York City, November 15, that by reason of the foregoing conditions some concerted action against these evil conditions by public-spirited men and women is necessary for the preservation of the public health and morals and the purity of the American home. Be it further

Resolved, That for the coördination and coöperation of the forces willing and able to combat these frightful abuses, the said conference hereby approves of the formation of a national society for the preservation of the public health, whose objects shall be as follows:

(*a*) To obtain and disseminate accurate information concerning practices and conditions of every kind that are dangerous to the public health and morals, and to work for the enlightenment of the public on all matters affecting these subjects.

(*b*) To work for the enactment of laws in the United States, all Territories, and colonial possessions, for the protection and preservation of the public health and morals, including those matters mentioned in sub-division (*c*) hereof.

(*c*) To assist the constituted authorities in the enforcement of all laws affecting the public health, including those laws for the prevention of quackery, charlatanism, and criminal practices in the healing art, whether by licensed or unlicensed practitioners; the prevention of adulteration and substitution of drugs and food substances; the prevention of the sale of narcotics, alcohol, and dangerous substances of every kind, whether under the guise of proprietary remedies and so-called patent medicines and nostrums and remedies, or whether sold as narcotics in violation of law; the prevention of the admission to the United States mails of all newspapers and printed matter of every sort advertising any business injurious to the public health or morals, and to prohibit the advertising of such business in any way. The mention of any one or more particular words or terms in this paragraph shall not be construed as limiting or qualifying the general terms "public health" or "public morals." Be it further

Resolved, That the public health conference committee, under whose direction this conference has been held, together with such additional members as they may select, is hereby continued, and appointed as a committee to prepare and present to the legislature of the State of New York an act to incorporate a society, the object, purposes, powers and provisions of which act shall be such as to provide for the formation and operation of a national society with the objects expressed in this resolution.

MR. CHAMPE S. ANDREWS presented for consideration a draft of a charter modeled after the charter of the American National Red Cross, in which the objects and purposes of the

organization are stated to be as set forth in the above resolutions.

DR. CHARLES A. L. REED of Cincinnati, representative of the American Medical Association, said in part:

The object of this conference is certainly a very meritorious one and all the more gratifying to physicians because it comes from the people as distinguished from the medical profession. It is, therefore, the sign of popular awakening to an evil over which society has been slumbering with too much tranquility for all too long a time. But it is to be remembered in approaching a practical solution of quackery that it exists to-day, as it has existed in all ages, by virtue of patronage derived from two apparently opposite sources, namely, ignorance and superculture; ignorance of the kind that believes in charms and incantations; superculture of the sort that would reorganize society, revise the plans and specifications of the universe, furnish a new chart for Heaven, and instruct God Almighty how to administer law. I see these conditions are only apparently opposite for the soul of the whole difficulty is the same in both instances; in the one there having been a failure to acquire, in the other, a failure to preserve a sense of the normal relations of things in life. The evil of quackery and charlatanism exists, therefore, not merely in the fact that we have quacks and charlatans, but that we have elements of society that demands them. This points to a depth of the evil that makes it all the more difficult to master. The task embraces, obviously, not merely legal regulation of quacks and charlatans, but the difficult task of educating the ignorant, and the vastly more difficult task of uneducating the supercultured. But difficulties only make tasks more attractive. So we must do these things, not alone here in New York—although this is a good beginning place; not here and there in spots in different parts of the country, but we must do them in a general way all over the country; for if we do not, with mails and transportation facilities always and everywhere available, we shall scarcely mitigate the evil at all.

Now this brings us to what I believe to be the very kernel of the matter. We are confronted by the fact that, so far as all regulative laws touching the practice of the healing art are concerned, they are, and must be, enacted by the different states by virtue of, and in accordance with, the police power reserved to them under the constitution. National regulation of this question, save as it applies to the mails and interstate commerce, is conceded to be impossible. It becomes a matter of primary importance, therefore, not only that these laws, but that police laws in general, should be as nearly as possible uniform, on a plane of high efficiency in all the states. Now the next important fact is that social, educational and commercial conditions have become so uniform all over the country that there has arisen a demand for correspondingly uniform laws dealing with these features of our social lives. The failure to get such uniformity in legislation from the different states has lead to an appeal to the congress for national laws dealing with what, in many instances are really state conditions, the regulation of which belongs to the prerogative of the different states. In some instances the congress, by strained construction of the Constitution, has responded to this demand. In other instances, where congress has failed to furnish such laws, many very good people say that there has been no delay in getting action through executive order issued without reference either to the law or the constitution. This state of affairs comprises what many very good people recognize as a dangerous tendency to the centralization of power at Washington. While I am in no sense a states right man of the original pattern, I do believe in observing the restrictions of the constitution and in maintaining the prerogatives vouchsafed to the states by that instrument.

Now, what is the remedy of this condition of things? What is the remedy for the specific evil, to consider which this conference has been called? So far as it is a question of laws at all it obviously lies in the direction of the enactment of uniform laws by the states, which laws shall be supplementary to, and in harmony with, national laws, wherever national laws deal with the same subject. And it seems to me that this conference can do nothing better, can subserve no higher public need than to resolve itself into national uniform laws-association. Such an association would be competent to deal in an educational way, not only with questions of national legislation, but more particularly with those of state police, bringing the two into harmony. It could embrace within its scope not alone the question of quackery and charlatanism, but such questions as charities and corrections, pure food and drugs, the status of the profession in the public services, state and national public health administration, regulation of the practice of medicine, the social evil, divorce, temperance, extradition, insurance, transportation, and such other questions, the diversity of laws relating to which leads to confusion and public detriment. Such an association, national in scope, organized on a broad plane, would not only deal more effectively with the special questions now under consideration by this conference, but would subserve a useful purpose in the body politic.

Dr. Reed offered the following resolution:

First. That the conference hereby resolves itself into an association, to be known as the American Uniform-Laws Association, whose objects it shall be to secure the enactment of new laws and such amendments to existing laws, national and state, as will make them practically uniform and in harmony with each other relating to the subjects of charities and corrections, pure foods and drugs, the status of the profession in the public services, state and national public health administration, regulation of the practice of medicine, the social evil, divorce, temperance, extradition, insurance, transportation and such other subjects as a committee on permanent organization hereinafter to be approved shall deem it wise and expedient to embrace in the plan of the association.

Second. That the president of the association be and is hereby authorized to appoint a committee on permanent organization, whose duty it shall be (a) to prepare a constitution and by-laws for an association with sections in accordance with the preceding motion; (b) to elect officers for the general association and for the sections of the same; (c) to arrange a program, and (d) select a place where the first meeting of such association shall be held during 1907.

MR. EUGENE O'DUNNE, Baltimore, deputy state attorney, approved the resolution. He said that the evils that are intended to be reached by this organization will aid greatly in driving the criminals to the wall; this organization can prepare the cases, get the needed data and furnish them to the prosecuting attorney. Therefore, this new organization comes as a very welcome thing, and the benefits will be far-reaching. If the men and women present knew fully the conditions which exist and could see the anguish of the mothers, their weeping, because of the the children taking soothing syrups so called, they would rise up in anger whenever "patent medicines" and quacks are mentioned. This organization, he said, should go further than the mere prosecuting of these offenders. The very life and foundation of society for coming generations, he said, is being sapped by the employment in factories of children under age.

He endorsed the resolution and urged its adoption. If the papers continue to insert these advertisements they will be little better than the criminals behind the bar. He hoped for the ardent coöperation of the press. Many papers in Baltimore refuse these advertisements. He suggested that the name of the new organization should be the Public Health Defense League.

REV. THOMAS R. SLICER offered an amendment to the resolution that the name proposed by Mr. O'Dunne, "Public Health Defense League," be inserted.

The resolution and amendment were carried.

MR. THOMAS W. BARLOW, District Attorney of Philadelphia, spoke of the work of Mr. Anthony Comstock and referred to him as the one living force that stands between the children of this country and a flood of immoral literature.

MR. ANTHONY COMSTOCK believed that this organization has built grander than any had conception of. He asked how many realize the facilities for reaching all the children in the country? How many realize the dissemination of the worst pictures, criminal drugs, articles and instruments for immoral uses into the schools, seminaries and colleges of this country unbidden and unsought? There are 20,000,000 boys and girls in this country between the ages of 5 and 18, and the postoffice offers facilities for reaching every one of them. Anyone can drop into a mail box the most infamous, degrading and soul-destroying literature, and if sealed no power can interfere with its being forwarded, and such literature is being constantly sent to schools and colleges. For thirty odd years the New York Society for the Suppression of Vice has been pelted with misrepresentations, but it has to a great measure cleansed the mails from literature that is worse than smallpox.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-second Annual Meeting, held at Hot Springs, Ark., Nov. 6-8, 1906.

(*Continued from page 1674.*)

Insurance Fees.

In response to a letter from the Kentucky State Medical Association, the executive committee took up the question of insurance fees and unanimously endorsed the action of that body in its stand for a uniform payment of $5 for life insurance examinations.

Some Mental Symptoms Due to Disease of the Nasal Accessory Sinuses.

DR. J. A. STUCKY, Lexington, Ky., reported ten cases, all of which gave evidence of chronicity having existed for a long time. All presented prominent characteristic symptoms of suppuration, and were submitted to the usual diagnostic tests. All were operated on after the Killian method. In two cases, in addition to invasion of the frontal and ethmoid, the sphenoid was involved. In eight other cases the maxillary sinus was likewise involved in the suppurative process. Probably in the ethmoid or its offshoots, the middle turbinate, is to be found the cause for the majority of cases of infection of the frontal, maxillary and sphenoidal sinuses. In these and many other cases of chronic ethmoiditis Dr. Stucky has noticed one or several of the group of symptoms associated with

this disease mentioned by Beaman Douglas, the cause of which has not been explained. It is evidenced by slow deterioration of the mental faculties, an inferior quality of work, loss of memory, disability for continued application, over-anxiety, general incapability, and procrastination.

In neurotic subjects and those with lowered vitality from any cause, an ethmoidal, sphenoidal, or frontal affection may start the vicious circle, composed of the sinus affection proper, and the neurasthenic or hysteric conditions, which later reach a form and degree which sometimes allow us to classify the bearer as one "bordering on insanity."

Metabolic Aspects of Over-Feeding and of Under-Feeding.

DR. RALPH W. WEBSTER, Chicago, said the term over-feeding or forced feeding means the giving of an amount of food which furnishes the body more energy than it needs, regardless of whether the addition be in the form of proteid, carbohydrate, or fat. Errors in diet are productive of various disorders as a result of the overtaxing of the digestive, absorptive, assimilative, or excretory organs. He referred to the obese, diabetic, and gouty subjects, on the one side, and the neurasthenic, neuralgic, and chlorotic patients, on the other.

Over-feeding is only a therapeutic measure, and not a causative factor in disease. An excess of food, in the form of fat or carbohydrate, exerts, even when given in large amounts, only a slight increase in the energy relation of the system. This applies to an immediate increase in the oxidative processes and not to the later effects of the reserved fat or carbohydrate. Only a part of such excess is burned up in the system, the chief part being stored in the various depositories, subject to the checking orders of the system. On the addition of fat to the diet, almost the total excess of energy is turned to the advantage of the body, not in the form of increased energy, but rather in the form of latent energy as a deposition of fat.

An increase of proteid in the diet raises the general tissue metabolism, as evidenced by the increased oxidation. This primary increase in the oxidative processes, which is effected by a meal rich in proteids, lasts for eight to ten hours. This fact may be expressed more briefly in the statement that every addition of proteids increases the proteid decomposition, the system soon adapting itself to a new equilibrium. It is erroneous to refer every loss of nitrogen to an increased decomposition of body proteid. There is no reason for supposing that tissue proteid is decomposed in any different way than is food proteid.

The following general effects of a long-continued underfeeding are to be recognized: 1. The proteid decomposition sinks to a certain point beyond which further decomposition is serious. The body at this point adapts itself to a fairly permanent equilibrium, as shown by the fact that not so much body proteid is lost in the latter periods as in the beginning. Nitrogenous equilibrium can be maintained on a lower proteid addition than is customary, provided the calorie need is covered. 2. Long-continued under-feeding, aside from very slight degrees of calorie deficit, lead to constant loss, not only of body fat, but also of body proteid, it being immaterial whether the proteid intake be large or small. The absolute height of the N-excretion depends on the amount of proteids, but the maintenance of nitrogenous equilibrium is independent of the amount as a balance is established to suit the intake. A calorie poor diet, which is rich in proteids, may protect the N-loss or may even raise it for a time, but the final result will be the same as if all parts of the diet are simultaneously reduced. 3. Whenever the addition of food lessens the calorie deficit, a building-up of cell material takes place, although the calorie need at this time may not be completely satisfied. This condition lasts until the body is accustomed to the new equilibrium, when N-loss begins anew, unless the calorie need is absolutely covered.

Surgical Treatment of Intestinal Obstruction.

DR. H. O. WALKER, Detroit, Mich., reported 11 cases of intestinal obstruction. Seven of them were chronic, but 2 of these became acute, making practically 6 acute and 5 chronic cases of obstruction of the bowel. In 6 cases the obstruction was in the small intestine, in 5 in the large intestine. Two of these cases involved both the small and large intestines. The mortality was 5, making a percentage of 45.5 per cent., a much better record than is usually obtained, yet he firmly believes that if he had seen these cases earlier there would have been little doubt that 3 of the 5 patients who died could have been saved, showing that the great mortality, as Moynihan puts it, is "the mortality of delay." The advantage of early diagnosis and early operation can not be emphasized too strongly.

DISCUSSION.

DR. T. J. WATKINS, Chicago, agreed with the essayist as to the importance of early diagnosis and of early operation. His experience leads him to believe that early operations for intestinal obstruction are almost certain to result in cures, whereas late operations are almost certain to result fatally. He recalled 8 acute cases in which he operated in the last two years. Six patients were operated on within six or twelve hours after obstruction had taken place; all recovered. The other two patients were operated on late, and both died.

DR. EDWIN WALKER, Evansville, Ind., referred to one cause of delay in operating in cases of intestinal obstruction—the use of cathartics. Cathartics are very much over-rated remedies, in his judgment. Last year he looked up the subject and was impressed with the ignorance of the general profession in regard to the action of cathartics and the method of prescribing them. Cathartics are productive of much harm in cases of intestinal obstruction. In fact, very few intestinal diseases of any kind are benefited by them.

DR. F. F. LAWRENCE, Columbus, Ohio, said the time when the physician should not use cathartics is when intestinal obstruction is suspected. If there is a volvulus, an intussusception, obstruction by bands, cathartics will cause intestinal peristalsis, intestinal perforation, and death. Placing the patient in the knee-chest or Trendelenburg position, and rectal inflation with air, oil, or water, are equally pernicious.

Migraine.

DR. C. S. CHAMBERLAIN, Cincinnati, Ohio, said that he has come to the conclusion that Rachford's plan of treatment is the only one which is not injurious to the patient, and which can be depended on for relief in most cases, and for cure in a considerable ratio of chronic cases. This treatment was described fully in THE JOURNAL, Oct. 17, 1903, page 985.

As this form of dispensing the preparation proposed by Rachford is inconvenient, Chamberlain had had it made in the form of a granular effervescent salt, and is convinced that the prescription in this form is fully as efficient as in the more expensive form of a carbonated solution.

(To be continued.)

MEDICAL ASSOCIATION OF THE SOUTHWEST.

First Annual Meeting, held at Oklahoma City, Okla., Oct. 31, 1906.

The Second Vice-president, DR. P. S. MITCHELL, Iola, Kan., in the Chair.

About 300 physicians attended this meeting, representing Missouri, Arkansas, Texas, Kansas, Oklahoma and Indian Territory and Oklahoma, was merged into this association.

Addresses of welcome were delivered by Mayor Messenbaugh on behalf of the local authorities, and by Dr. L. Haynes Buxton, on behalf of the local medical profession. Replies were made by Dr. George West, Eufaula, I. T., and Dr. J. N. Jackson, Kansas City, Mo.

Papers were read before three sections, surgery, general medicine, and eye, ear, nose and throat.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. C. M. Rosser, Dallas, Texas; vice-presidents, Dr. J. P. Runyan, Little Rock, Ark.; Dr. W. F. Sawhill, Concordia, Kan.; Dr. John Punton, Kansas City, Mo., and Dr. E. O. Parker, Guthrie, Okla.; secretary-treasurer, Dr. F. H. Clark, El Reno, Okla.

Section on General Medicine: Chairman, Dr. S. C. James, Kansas City, Mo.; secretary, Dr. C. C. Goddard, Leavenworth.

Kan. Section on Surgery: Chairman, Dr. J. N. Jackson, Kansas City, Mo.; secretary, Dr. B. F. Fortner, Guthrie, Okla. Section on Eye, Ear, Nose and Throat: Chairman, Dr. E. H. Cary, Dallas, Texas; secretary, Dr. R. E. Runkle, El Reno, Okla.

The association is to meet annually, in the fall of the year, and all physicians in the states mentioned above, who are in good standing in their respective state societies, are eligible to membership.

An executive committee, consisting of three members from each state, determines the place of meeting.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Dysmenorrhea.

The treatment of dysmenorrhea is often puzzling to the general practitioner who, for various reasons, must assume the charge of such cases. A. Routh, in *British Med. Jour.*, states that when complete obstruction to the menstrual flow is present, the condition must be relieved by incision, while partial or relative obstruction is best treated by dilatation. In the latter instance he prefers rapid dilatation under anesthesia, followed by plugging with gauze. In some cases he uses tents.

In relative obstruction, as in cases of retroverted or subinvoluted uteri, replacement is necessary with iodized phenol applications to the endometrium or in some cases curettage followed by the administration of ergot given between the menstrual periods to encourage involution. In such event the ergot should always be discontinued three days before time for menstruation if much pain is present during this period.

In the nervous form of dysmenorrhea, the so-called spasmodic type, the treatment is essentially prophylactic and medical rather than surgical. In these cases general treatment is necessary, which should include physiologic rest, moderate exercise in the open air, if possible, and a carefully regulated diet. The bowels and skin should be kept active by purgatives and baths; the clothing should be of wool; the patient's mind must be kept occupied, including some occupation involving practical sympathy for others. In anemic cases Routh recommends the following combination as an excellent one to correct such conditions:

℞.	Liq. ammon. acetatis	℥ii 8	
	Ferri et ammon. citratis	gr. vii	50
	Tinct. calumbæ	f℥ss 2	
	Liq. arsenicalis	m. iii	20
	Magnesiæ sulph.	℥ss 2	
	Aquæ chloroformi q. s. ad	f℥i 30	

M. Sig.: To be taken at one dose, and such a dose repeated after each meal.

One week previous to the time for menstruation he recommends that potassium bromid grains 10 (.65) be added to the foregoing combination, or sodium salicylate if there is a rheumatic tendency.

If the dysmenorrhea still persists he advises the following combination to relieve the pain:

℞.	Tinct. card. co.	f℥ss 2	
	Tinct. zingiberis fort.	m. v	30
	Liq. ammon. acetatis.	f℥iv 15	
	Antipyrini	gr. v	30
	Potassii bromidi.	gr. xv 1	
	Aquæ caryophylli q. s. ad.	f℥i 30	

M. Sig.: To be taken at one dose, when the pain is present, and repeated in two hours if necessary.

If stronger sedatives are required he recommends a combination similar to the following:

℞.	Antipyrini	gr. vi	40
	Caffeinæ citratæ	gr. iii	20

M. Fiat cachet No. i. Sig.: To be taken at one dose.

If the extremities are cold of if the patient feels chilly, prompt relief is given by having the patient inhale a nitrite of amyl pearl (3 minims), or by the administration of nitroglycerin grain 1/100 (.0006) hypodermically. Alcoholics, opium or chloral should be avoided especially in neurotic individuals in order to avoid any tendency toward formation of a habit.

In what is known as the congestive form of dysmenorrhea the pain is sometimes so severe as not to be relieved by antispasmodics, but in many instances it will yield to extract of cannabis indica grain 1/3 (.02), or a combination similar to the following:

℞.	Pulv. hydrastis	gr. v	30
	Ext. belladonnæ	gr. 1/12	005
	Potassii bromidi	gr. v	30

M. Fiat capsula No. i. Sig.: One such capsule three times a day.

At the same time efforts should be made to relieve this congested condition by producing activity in other excretory organs, the liver, bowels, kidneys and skin.

To relieve the pelvic congestion hot vaginal douches (110 F.) containing borax or the tincture of iodin may be ordered. In severe cases he advises that the cervix be punctured or leeches applied once a week to relieve the venous engorgement. As a substitute for this treatment he states that glycerin tampons be inserted.

In cases of ovarian dysmenorrhea he advises turpentine stupes or hot bran poultices over the abdomen. He advises against operative measures except when there is an undeveloped uterus.

Gout.

The following combinations are recommended by the *Deutsch. med. Wochenschrift* in the treatment of acute gout:

℞.	Tinct. colchici	m. xx	1 30
	Potassii citratis	gr. xx	1 30
	Aquæ chloroformi	f℥i	30

M. Sig.: One such dose to be taken every four hours until the pain ceases.

The foregoing should be preceded by a purge. Or:

℞.	Tinct. colchici	m. xx	1 30
	Tinct. belladonnæ	m. v	30
	Tinct. cimicifugæ	m. vi	40
	Potassii bicarb.	gr. xii	75
	Infus. gentianæ co. q. s. ad	f℥i	30

M. Sig.: One such dose every four hours in water.

Pharmacopeia for Infants.

Grünbaum, in the *Practitioner* (London), under this title tabulated a list of preparations to be used in the various forms of medication in the treatment of infants. The doses calculated are for infants aged three months and weighing 13 pounds or more. Infants under one month should receive one-half the dose here calculated, and those over six months, double the dose.

LOTIONS.

As lotions to be used in diseases of infants he recommends the following combinations:

Lotio acidi borici:

℞.	Acidi borici	gr. xv	1
	Aquæ	f℥i	30

M. Fiat lotio.

Lotio acidi carbolici:

℞.	Phenol	gr. viii	50
	Aquæ	f℥i	30

[This constitutes approximately a 2 per cent. solution of phenol.]

M. Fiat lotio.

Lotio acidi carbolic cum boracc:

℞.	Glyceriti acidi carbol.		
	Glyceriti boracis, āā	m. vi	40
	Aquæ q. s. ad	f℥i	30

M. Fiat lotio.

Lotio aluminis:

℞.	Aluminis	gr. iv	25
	Aquæ	f℥i	30

M. Fiat lotio.

Lotio ammonii chloridi:

R. Ammonii chloridi.....gr. xv 1
Aquæ .....f℥i 30

M. Fiat lotio.

Lotio calaminæ:

R. Calamini prep.....gr. xxx 2
Zinci oxidi.....gr. xv 1
Glycerini .....m. xx 1 30
Solutio calcis.....f℥iss 45
Aquæ .....f℥i 30

M. Fiat lotio.

Lotio carbonis detergens:

R. Sol. picis (coal) alc.....m. xii 75
Aquæ .....f℥i 30

M. Fiat lotio.

Lotio paraffini compositus:

R. Paraffin .....℥iii 90
Balsami peruviani .....℥ii 8
Hydrarg. oleatis .....℥i 4
Olei oliviæ .....℥i 30

M. Fiat lotio. Sig.: Apply with a brush.

Lotio plumbi:

R. Sol. plumbi subacetatis.....m. vi 40
Aquæ .....f℥i 30

M. Fiat lotio.

Lotio plumbi cum opio:

R. Tinct. opii .....℥ss 2
Lotio plumbi .....℥i 30

M. Fiat lotio.

Lotio potassii chloratis cum boraci:

R. Potassii chloratis
Sodii boratis, āā.....gr. vi 40
Aquæ .....f℥i 30

M. Fiat lotio.

Lotio sodii biboratis:

R. Sodii biboratis
Sodii bicarb., āā.....gr. xv 1
Glyceriti acidi carbol.....m. xv 1
Aquæ q. s. ad.....f℥i 30

M. Fiat lotio.

Lotio zinci chloridi:

R. Zinci chloridi.....gr. i 06
Aquæ .....f℥i 30

M. Fiat lotio.

Lotio zinci sulphatis:

R. Zinci sulphatis.....gr. ii 12
Aquæ .....f℥i 30

M. Fiat lotio.

APPLICATIONS.

Applicatio glycerini boricī:

R. Glycerini .....℥v 150
Acidi borici .....℥iii 90

M. by heating. Sig.: Use as a local application.

Applicatio boracis cum potassii chlorato:

R. Potassii chloratis
Sodii boratis, āā.....gr. xii 75
Tragacanthæ pulv.....gr. iv 25
Glycerini .....℥i 4
Aquæ chloroformi q. s. ad.....f℥i 30

M. Fiat applicatio.

BATHS.

Balneum alkalinum:

R. Sodii bicarb. .....℥i
Aquæ at 96 F.....Oxl

M. Sig.: For a bath.

Balneum calidum:

Aqua 98 to 104 F.

Balneum frigidum:

Aqua 65 to 50 F.

Balneum sinapis:

R. Sinapis .....℥ss
Aquæ (98 to 106 F.).....Oviii

Balneum sulphuratum:

R. Potassii sulphuratæ .....℥i
Aquæ (hot) .....gallons vii

Balneum tepidum:

Aqua 85 to 92 F.

Medicolegal

Test Under Statute as to Prescribing of Narcotics.

The Court of Criminal Appeals of Texas holds insufficient, in Blair vs. State, an indictment of a physician which was framed under section 2, page 45, of the Acts of the Twenty-ninth Legislature of that state, which prohibits certain parties from prescribing morphin and other narcotic drugs, under the provisions of said section, with the following proviso: "Provided, however, that the provisions of this section shall not be construed to prevent any lawfully authorized practitioner of medicine from prescribing in good faith for the use of any habitual user of narcotic drugs, such substance as he may deem necessary for the treatment of such habit." In order to bring the physician within the terms of this law, the court says, the indictment must allege such facts as make him amenable, and if he comes within the terms of the proviso, he has not violated this statute. Those who are brought within the proviso are not within the terms of the inhibition because excepted from the punishable provisions of the act. In order to bring a party within the provisions of this act it should be alleged not only that he did not prescribe it (here morphin) in good faith for the use of the person charged, but that he did not deem it necessary for the treatment of such habit. The good or bad faith is not the criterion. It is the good faith on the part of the physician prescribing the medicine or such substance as he may deem necessary for the treatment of such habit. If the prescription for the morphin was deemed necessary for the treatment of the habit of the person, then the physician is not within the purview of the statute, and is exempted by the terms of the law. The mere fact that he may or may not have given it in good faith is not sufficient. The good faith is measured by what the party prescribing deems necessary for the treatment of the habit. If the morphin was necessary for the treatment of the habit, the giving of it was not violative of the statute.

Elements Affecting Expectancy of Life and Damages for Injuries.

The Supreme Judicial Court of Maine holds, in the personal injury case of Haynes vs. Waterville & Oakland Street Railway, that the expectancy of life of a person injured is an element to be considered in awarding damages for the injury, and that, in determining this expectation of life, the age at which the last two deceased paternal ancestors died is a material factor. In this case, as bearing on the expectancy of life of the plaintiff, a boy about 10 years of age, when injured, his grandfather was permitted to testify, against objection, as to the age at which his own father and grandfather respectively had died. The court does not consider that this was error. It is common knowledge, it says, that physicians and life insurance companies regard the longevity of one's ancestors as an important factor in determining his expectation of life. The various "mortality tables" only give averages, and in an individual case the expectation may be higher or lower than that average by reason of many circumstances peculiar to that case, such as the presence or absence of inherited disease, deformity, etc. A descent from robust, long-lived stock gives promise of longer life than from frail, short-lived ancestry, other things being equal.

The loss of earning power, the court further holds, is not the extent of the damage sustained from a serious physical permanent injury to a person, the lost usefulness and enjoyment out of his prospective life are also elements of damage. For example, it says in this case that the total loss of the left hand by a boy of 10 years takes a great deal of usefulness and enjoyment out of his prospective life. The loss of earning power is by no means the extent of the injury. And a verdict of $6,500 it says was perhaps large, but not so glaringly excessive as to show clearly that sympathy or prejudice overcame the judgment of the jury.

Damages Recoverable for Wrongful Death of Physician.

The Court of Appeal, Second District, California, affirms, in the case of Annie T. Evarts and others vs. the Santa Barbara Consolidated Railway Co., a judgment for $12,000 for the death of a physician about 44 years of age, who had been

engaged in practice for 22 years, and whose death was caused by his being precipitated into an unguarded excavation of the company's while driving on a public street after dark. The court says that, as to the earning capacity of the physician, while it might properly be considered in determining the amount of the verdict, the same was not determinative of such amount. In this case, as in that of Cederberg vs. Robinson, 100 Cal. 96, and Butler vs. Ashworth, 102 Cal. 663, there was not presented to the jury the value of the services of the physician to his patients, or the amount of his earnings, yet there was evidence that he was a regular practicing physician, that he possessed a number of patients, some of whom he was attending at the time of his injury, and that he was a strong man in the prime of life; from which facts alone the jury would be authorized to give substantial damages. The amount of pecuniary loss to the family was for the jury to decide. This court can not say that it was excessive. The evidence admitted as to the ill health of the wife was not improper. Her situation and condition tended in some degree to establish the pecuniary loss sustained. The damages to be assessed were the plaintiffs' damages; compensation to themselves for pecuniary injury.

Must Avoid Preventable Delay in Getting to Hospital.

The Supreme Court of Arkansas holds, in St. Louis Southwestern Railway Co. vs. Reagan, an action brought by the latter party wherein he recovered a verdict for $2,000 for the company's failure to furnish him prompt transportation to its hospital and prompt treatment after his arrival, that the judgment of the lower court must be reversed for error in the treatment of the subject of transportation. It holds that it was error to instruct the jury that if there was an agreement by the company in case of injury to furnish the plaintiff transportation to its hospital, and if it failed to do so, he was entitled to recover for whatever suffering and pain there may have been caused to him by reason of the delay in furnishing him transportation, notwithstanding he may have been able to pay for such transportation. Rather should the jury have been instructed to the effect that if they found from the evidence that the plaintiff was injured while in the service of the company, was entitled by virtue of an implied contract with it to be transported free of charge to its hospital for treatment, and the company failed or neglected to promptly furnish transportation to him to go to the hospital, by reason whereof his injury was increased, yet if he had the means by which he could have paid his way and thereby reached the hospital promptly, it was his duty to have done so, and thereby avoided increased injury; and if it was found that he did have the means and failed or neglected to use it he could not recover any sum as damages which resulted from the delay of the company in furnishing him transportation to the hospital.

It appeared in this case that the transportation to the hospital would have cost but $6, and that the company offered evidence to show that when the plaintiff arrived at the hospital he had over $3,000 cash in his possession; but, having been injured on the 8th of the month he waited until the 12th for a pass, instead, as the court says, of paying his fare and afterwards compelling the company to restore the amount paid. This delay, no doubt, acted unfavorably on his wound, and was the cause of considerable suffering on his part, but as he had it in his power to have avoided this delay by buying a ticket, the court thinks it was his duty to have done so. Suppose, it says, the company had never furnished him a ticket, could he with $3,000 in his pocket have been justified in refusing to spend $6 for a ticket and in allowing his leg to mortify so that amputation would be necessary, and, if he did so, could he justly demand of the company compensation for the loss of a leg? It was his duty, when the company failed to carry out its contract, to do what he reasonably could to avoid further injury to himself, and the court is of the opinion that he could not recover for pain and suffering under such circumstances, for he had it in his power to have avoided such injury. And it holds that it was error to refuse to allow evidence that he had money with which he could have bought a ticket.

It must be remembered, the court also says, that the railway company was under no obligation to enter into a contract of the kind set up by this plaintiff. The law did not require the company to enter into a contract to carry its employes to a hospital when injured. In refusing to perform such a contract the company was guilty of no breach of duty to the public, nor of any tort. The damages must be assessed as in ordinary cases of breach of contract and only those damages could be recovered as were the natural and proximate consequences of the defendant's breach of contract. When a party has the money with which to purchase a ticket the natural and ordinary damages which would result from a breach of a contract to give him free transportation would be the price of the transportation agreed to be furnished. If the plaintiff in this case had the money with which to have purchased a ticket, the court sees no reason why he should be allowed to recover damages for failure to furnish him a ticket beyond the price of the ticket. For if, having the money to buy a ticket, he voluntarily exposed himself to additional pain and suffering rather than pay the price of a ticket, his suffering caused by the delay was as much due to his own inaction as to that of the company, and he ought not to be allowed to hold the company liable for pain and suffering that he could have avoided by such a slight expenditure on his part.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below:

Medical Record, New York.

November 10.

1 *Plea for a More Rational Therapy in Tuberculosis. F. M. Pottenger, Monrovia, Cal.
2 *Neurasthenia. H. Richardson, Baltimore.
3 *Electricity in the Treatment of Disease. J. V. Shoemaker, Philadelphia.
4 *Postoperative Gastric Paralysis—Acute Dilatation of the Stomach. W. A. Bastedo, New York.
5 Importance of a Clear Understanding of the Vasomotors and the Utilization of Their Function to Get Best Therapeutic Results. W. C. Abbott, Chicago.
6 Syphilis of the Nasal Fossæ. A. Bardes, New York.
7 Obliterative Endarteritis of Femoral Distribution with Gangrene of the Feet. E. H. Eising, New York.
8 *Use of Oxygen in Asphyxia Neonatorum. C. D. Spivak, Denver, Colo.

1. **More Rational Therapy in Tuberculosis.**—Pottenger says that the original tuberculin of Koch and his later preparations, as well as numerous preparations made by other men, if used properly, will stimulate the cells of the individual suffering from tuberculosis to the formation of defensive bodies, as is shown by the increase of the agglutinating and opsonic power of the blood. There are also certain sera which seem to furnish the antibodies already formed, which are of some value. The best known of these are the Fisch, Maragliano and Marmorek sera. One of the chief aims of the physician should be to maintain nutrition at the highest point. The hygienic-dietetic-open-air treatment has for its basis the betterment of nutrition. Open air, Pottenger declares, is not a cure for tuberculosis. Used properly, however, it is one of the greatest aids to nutrition that can be employed. Open air should be supplemented by proper food and carefully regulated rest and exercise to make it most effective. Hydrotherapy is another measure of great value. The cheering and toning effect of sunshine is a very potent factor in aiding nutrition. The giving of raw meat or muscle juice is also indicated. All distressing symptoms and complications should be carefully managed.

2. **Neurasthenia.**—Richardson classifies the etiologic factors of neurasthenia under four heads: 1, Mental strain; 2, disturbances of digestion, malnutrition and autointoxication; 3, toxemia from infectious diseases; 4, traumatism and shock. It is apparently the vasomotor system which is principally affected. All emotions act on this system of nerves. An important etiologic factor from a therapeutic standpoint is a gouty constitution. In a case of this kind the urine is intensely acid and the carbon nitrogen factor is very low.

3. **Electricity in Treatment of Disease.**—Shoemaker says that electricity is always the same in itself, but that success in its use depends largely on the personal skill and good judgment of the operator. Electricity may be used to produce local necrosis or an eschar; to disturb the electrical relations of the nerves and muscles; to modify metabolism; to act as a temporary stimulant to nutritive processes, and especially to the nervous system and circulatory apparatus; to accomplish certain local effects by stimulating physiologic functions; to destroy parasites on the surface of the body; to produce electrolysis; to produce intense light; to produce a high degree of heat, and to produce magnetic effects. In general, he considers electricity only an adjuvant to other treatment.

4. **Postoperative Gastric Paralysis.**—Bastedo reports 3 cases of acute dilatation of the stomach. One was of the postoperative paralytic type; the other two were without paralysis and were due, respectively, to the ingestion of a heavy meal in a chronically dilated stomach, and to the artificial dilatation with gas of a stomach which had an obstructed pylorus. In the first case paralysis of the stomach, pylorus, and probably part of the duodenum, had quickly followed an operation for the removal of both tubes and one ovary. There was a large amount of secretion. It was noted that vomiting did not seem to lessen the distension to any great extent, nor did belching bring forth any large quantity of gas. In the second and third cases acute dilatation occurred without paralysis.

8. **Use of Oxygen in Asphyxia Neonatorum.**—Spivak reports two instances in which new-born infants which had been given up by the physician as hopelessly asphyxiated, were revived by the use of oxygen. A stream of this gas was turned into the nostrils of the baby by the attending nurse.

Boston Medical and Surgical Journal.

November 8.

9 Classical Symptoms of Hysteria. P. Janet, Paris, France.
10 *Achylia Gastrica. F. W. White, Boston.
11 *Sterility in the Male: Its Operative Treatment when Due to Bilateral Epididymitis. W. C. Quinby, Boston.
12 The Analytic Method in Psychotherapeutics. H. Linenthal and E. W. Taylor, Boston.

10. **Achylia Gastrica.**—White reports 7 cases and emphasizes the following points: 1. Simple achylia gastrica is a relatively common condition. It made up nearly 5 per cent. of this group of cases. 2. The diagnosis must be made from the physical examination of the patient and his stomach contents and feces. The symptoms are not characteristic. 3. Cases in which there is entire lack of HCl secretion, but in which very minute traces of pepsin or rennin are retained are not achylia in the strictest sense of the word, but are best classified as achylia. 4. In making the diagnosis of gastric cancer, remember the frequency of simple achylia, which may resemble it closely. The examination of the feces for invisible blood is especially useful here. 5. The etiology of simple achylia is unproved; its course suggests a functional origin. 6. Its most satisfactory treatment is hygienic and dietary.

11. **Sterility in Male.**—Quinby states that the following points may be emphasized: In all cases of sterility both husband and wife should be examined carefully. Sterility in a certain number of instances is due to the stenosing effects of a bilateral epididymitis. When so caused it may be relieved by an anastomosis between the vas and epididymis below the point of occlusion, as has been demonstrated on guinea-pigs by the author and on dogs by Martin. Such an operation offers practically no risk to life. Its performance is not difficult, needing only familiarity with the anatomy and pathology, proper suture material and gentleness in manipulation. The first suture material tried by Quinby was the finest spring-brass wire, such as is employed in the needle of the hypodermic syringe. One end of this was filled smooth and sharp and the rest of the wire annealed in the flame up to within about one-eighth of an inch of the sharp end. This was then used as a needle and thread combined. The extreme softness of the tissues, however, soon made it evident that no form of wire, however fine and pliable, would answer the purpose. Therefore, a strand of the finest sewing silk, No. 000, was divided into thirds and threaded into a so-called Beader's needle. This was found to answer all requirements. It was found that the anastomosis made by splitting the vas longitudinally was more easily performed than after cross-section. This longitudinal splitting offers a more extensive surface to be apposed to the epididymis.

New York Medical Journal.

November 10.

13 Presentation of Portrait of Dr. Carl Fortunatus Munde. A. Jacobi, New York.
14 *Study of Three Thousand Four Hundred and Thirty-six Cases of Senile Cataract. C. A. Oliver, Philadelphia.
15 *Treatment of Persistent Occipito-Posterior Positions. G. L. Brodhead, New York.
16 Epidemic Cerebrospinal Meningitis in Birmingham, Ala., During the Past Year. J. M. Mason, Birmingham, Ala.
17 *Surgical Treatment of Certain Lesions of the Upper Abdomen. J. B. Boucher, Hartford, Conn.
18 Importance of Early Recognition of Nasal Obstruction, and Its Relation to Later Respiratory Disturbances. F. A. Faught, Philadelphia.
19 Review of Recent Work in Clinical Pathology. Sputum, Gastric Contents, Feces. T. W. Hastings, New York.
20 Symptomatology and Diagnosis of Gastric Ulcer. M. R. Barker, Chicago.
21 *Appendicitis: A Plea for Complete Operations in Pus Cases. W. D. Ward, Rochester, N. Y.

14. **Senile Cataract.**—Oliver's study shows that the average age of operation for senile cataract is about 63 years. The occupation of the male played an important part in regard to the maturity and even the causation of the cataractous condition. The unskilled laborer gave the highest operative age average, 66 years. The skilled workmen gave the lowest age for the operative procedure, 68 years. The high-grade artisan showed no lenticular condition fit for removal at an average age of 63 years. The brain worker gave a very high operative age average, 65 years.

15. **Occipitoposterior Positions.**—Brodhead emphasizes the great importance of a thorough examination to determine the precise position of the head before any forceps operation is undertaken. He mentions as the most favorable conditions for succesful forceps rotation the well-flexed head, the low position of the vertex and careful attention to the technic of the operation.

17. **Surgical Treatment of Lesions of Upper Abdomen.**—Boucher discusses the functional and organic diseases of the liver and its ducts, the stomach, duodenum and pancreas, and, indirectly, the vermiform appendix.

21. **Appendicitis.**—Ward reviews the literature, in part, and reports several personal cases to show that complete and thorough work can be done safely in the region of the appendix, even though pus is present, and that it should be done, as it will give better results than any other method. He condemns the waiting policy.

The Lancet-Clinic, Cincinnati.

November 10.

22 *Wounds of the Liver. J. E. Cannaday, Hansford, W. Va.

22. **Wounds of Liver.**—Cannaday reports 6 cases of injury of the liver in which the treatment adopted shows the value of controlling liver hemorrhage by suture, making the peritoneal toilet by dry sponging instead of irrigation, and the avoidance of packing and drainage.

St. Louis Medical Review.

November 3.

23 *Case of Sympus (or Symmelus) Dipus. L. U. Singer, Clearfield, Iowa.

November 10.

24 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued). M. G. Seelig, St. Louis.
25 Dr. Simon Flexner's Work on Experimental Cerebrospinal Meningitis and Its Serum Treatment. O. H. Brown, St. Louis.

23. **Case of Sympus Dipus.**—Singer's patient was one of twins; the other, the first-born, was a normally formed and healthy male child, is still living, and has never been sick. The parents are both strong and healthy. It was a breech presentation and the cord was clear of the body, not wrapped round it in any way. The child lived two hours and cried lustily. It could move its arms and head. There appeared to be only one bone (femur) in the upper part of the limb, but two fused bones in the lower part. The feet were distinct. Most, if not all, of the pelvis was recognizable. The rudiment of St. Hilaire's additional appendage, resembling a tail placed immediately above the anal region, was present.

As to the external organs of generation, there was an opening, but Singer could not tell whether it was an anus or a vaginal opening. Neither feces nor urine was passed. The parents have no other theories to account for the condition of the child. They have previously had five healthy children, the first two being twins, and all are doing well.

Journal of Infectious Diseases, Chicago.

October 30.

26 *Oral Administration of Antitoxins for Prevention of Diphtheria, Tetanus, and Possibly Sepsis, etc. C. T. McClintock and W. E. King, Detroit, Mich.
27 *Phagocytosis of Red Corpuscles. L. Hektoen, Chicago.
28 *Observations on the Opsonic Index and the Antipneumococcal Power of the Blood in Pneumonia. H. E. Wolf, Chicago.
29 *The Production of Cytotoxic Sera by the Injection of Nucleoproteids. R. M. Pearce and H. C. Jackson, Albany, N. Y.
30 *Streptococci from Scarlatinal and Normal Throats and from other Sources. G. F. Ruediger, Chicago.
31 New Simple Method for Staining the Polar Bodies of Diphtheria Bacilli. A. A. Epstein, New York.
32 A Simple Method of Sterilizing Blood for Cultural Purposes. E. P. Bernstein and A. A. Epstein, New York.
33 *Mouth Disinfection in the Prophylaxis and Treatment of Pneumonia. A. Wadsworth, New York.

26. **Oral Administration of Antitoxin.**—McClintock and King show that antitoxins for diphtheria and tetanus may be given by mouth and absorbed in sufficient amount to show markedly antitoxic properties in the blood of the treated animal. This result has been obtained by the use of certain drugs with the serum: on the one hand, drugs that inhibit digestion; on the other, those that promote absorption. It remains to be shown what are the best drugs for this purpose and in what quantities. Their experiments also show that the toxins of diphtheria and tetanus are absorbed from the alimentary canal, provided digestion is inhibited. This may point to a method for slow, gradual immunization of animals or men, and also suggests an explanation of many cases of toxemia, due to the absorption of putrefactive products when digestion is deranged. When antidiphtheria serum alone is given to guinea-pigs by the stomach, absorption does not take place with any degree of uniformity. It is interesting to note that the so-called sensitizing action of horse serum when given to guinea-pigs by the mouth is not nearly so great as when injected subcutaneously or into the peritoneum.

27. **Phagocytosis of Red Corpuscles.**—The principal results of Hektoen's experiments may be summarized as follows: Normal serum may contain opsonins for heterologous and in some instances also (human serum) for homologous erythrocytes. Repeated injections with alien blood commonly give rise to the accumulation of hemopsonins in the blood. Immune hemopsonic serum may contain common or non-specific hemopsonins, as well as specific hemopsonins directed particularly against the corpuscles of the blood employed for the injection. Immune hemopsonins possess a high degree of resistance to heat and other influences. Hemopsonins render red corpuscles susceptible to phagocytosis by various leucocytes, including the homologous, but the phagocytic activity of different leucocytes toward opsonized erythrocytes may vary. Human serum may contain agglutinin and opsonin for human erythroyctes. This appears to be the case especially in typhoid fever. The corpuscles of various individuals vary in their susceptibility to agglutination and phagocytosis by human leucocytes and the phagocytic power of leucocytes may vary. Autoagglutinins and auto-opsonins appear to occur occasionally. The demonstration of opsonins for human corpuscles in human serum may help us to a better understanding of the phagocytosis of erythrocytes that occurs in infectious and other processes.

28. **Opsonic Index and Antipneumococcal Power of Blood in Pneumonia.**—Wolf finds in pneumonia that the pneumococcic-opsonic index is first decreased, but that in favorable cases it rises, reaching its height soon after crisis, while in early fatal cases it remains consistently low. The estimated total antipneumococcal index (estimated from the leucocytic index and the opsonic index) is early increased and remains high until crisis is complete in cases with favorable termination. The experimental injection of dead virulent pneumococci produces a similar evolution in the antipneumococcal index in normal persons as that which occurs in pneumonia; but dead avirulent pneumococci seems to have no effect on the pneumococcic-opsonins. Injection of patients suffering with lobar pneumonia with pneumococcal vaccines seems to exert a favorable influence on the course of the disease, as indicated by an apparent decrease in mortality and by early crisis, but a great deal of further work is necessary before any conclusion of final value can be drawn.

29. **Production of Cytotoxic Sera by Injection of Nucleoproteids.**—Pearce and Jackson's experiments do not support the theory that specific cytotoxic sera may be developed by the injection of nucleoproteids as claimed by Beebe, but indicate rather, that such sera have certain mildly toxic properties acting in a general way and affecting especially the principal excretory organ, the kidney. Beebe's claims for a specific pancreas serum based on the demonstration of reducing substances in the urine, especially in the absence of histologic changes in the pancreas, seems to be untenable in view of the finding by Jackson and Pearce of like reducing substances in the urine of normal dogs.

30.—This article is practically identical with that which appeared in THE JOURNAL, Oct. 13, 1906, page 1171.

33. **Mouth Disinfection in Prophylaxis and Treatment of Pneumonia.**—Wadsworth's investigations show that pneumococci, as compared with other pathogenic bacteria, are extremely susceptible to plasmolytic action of saline and alkaline solutions and also to the antiseptics which act in this way. But the susceptibility to antiseptics in general varies greatly and especially under different conditions. In broth media the pneumococci are readily destroyed; in exudates the albuminous material and detritus interfere with the action of many antiseptics; in sputum, disinfection by harmless solutions is extremely difficult. Of all the commercial solutions studied—listerine, borine, borolyptol, glycothymoline, odol and Seiler's solution—none proved efficient when tested on pneumococci under the conditions most favorable for their actions. Formalin, lysol and hydrogen peroxid failed to act on the pneumococcus in exudates. Alcohol alone, of all the antiseptics studied, proved efficient when tested on the pneumococci under all the conditions of the experiments. Observations on the diffusion of the different solutions with the secretions of the mouth under different conditions showed that the presence of salts in isotonic quantities and alkalies was of a positive, if slight, value. The rapid diffusion obtained with alcoholic solutions is greatly accelerated by the addition of glycerin. Finally, the results of these experiments suggested the use of hot solutions. As shown by the practical studies cleansing the mouth with simple isotonic salt solution removes a certain amount of secretion and with it some of the infectious material, but does not destroy the bacteria. With the alcohol wash many of the bacteria are destroyed, the contaminated secretions are more rapidly removed and at the same time disinfected, and, finally, the natural resources of the tissues are more safely and efficiently aided in the elimination of the infectious material. It was thus determined that alcohol solutions containing glycerin and salts in bland quantities are in every particular more efficient than any of the washes hitherto recommended for mouth cleansing or disinfection; 30 per cent. of alcohol being the strongest that can be comfortably and habitually used in the mouth and the weakest that will give reliable disinfection.

The present research with reasonable precision shows that not only is the simple cleansing best effected with bland alcoholic solutions, but as disinfectants in the mouth these solutions, of all those studied, alone possess practical value. Wadsworth recommends the following solutions:

℞	Sodium chlorid	gr. xl	8
	Sodium bicarbonate	gr. xx	1 4
	Glycerin		
	Water (dist.), āā	f℥iss	45
	Alcohol	f℥v	150
	Spirits of chloroform	f℥ii	8
	Oil of wintergreen	Oxx	10,000

Dilute with water in equal parts.

For convenience in hospital practice the solution is so made up that the addition of water in equal parts gives the strength desired. The flavoring spirits of chloroform and oil of wintergreen lose their strength after keeping a few weeks, so that it may be wise to guard against this by the substitution of

other flavoring agents. Owing to the sweet taste and the evaporation of the chloroform and oil of wintergreen this solution has not proved so satisfactory in private practice as those containing other flavoring agents. Although it was found that the solution may be varied to suit the taste of the patient by the use of different flavoring agents, the following formula has given Wadsworth the best results:

R.	Sodium chlorid (C. P.)	℥ss	2 |
	Sodium bicarbonate (C. P.)	gr. x	7 |
	Water (dist.)	f℥ii	60 |
	Glycerin	f℥i	30 |
	Alcohol	f℥v	150 |
	Thymol		
	Menthol, āā	gr. i	07
	Oil of wintergreen	gtt. iii	18
	Oil of cinnamon	gtt. ii	12
	Oil of eucalyptus	gtt. v	30
	Tincture of cudbear	f℥iss	6 |
	Tincture of rhatany	f℥ss	2 |

M. Sig.: Dilute with equal parts of water.

In preparing these solutions the salts should be dissolved in the water before adding the alcohol. Even when carefully made up a cloudiness or a precipitate may appear in the solution, especially in those containing the tincture of rhatany. By adding two or three of the flavoring oils a less pronounced taste is obtained than when only one is used.

American Journal of Urology, New York.

October.

34 Primary Carcinoma of the Uterus. K. Vorpahl, Germany.
35 *Prostatic Albumin and Albumose. E. G. Ballenger, Atlanta, Ga.
36 *Oxaluria as a Cause of Prostatic and Urethral Disturbance. G. K. Swinburne, New York.
37 Chronic Catarrhal Nephritis. I. N. Danforth, Chicago.

35. **Prostatic Albumin and Albumose.**—According to Ballenger, the presence of albumin and albumose in the urine voided after massage of the prostate, when that passed before is normal, is as reliable in the diagnosis of prostatitis, or an abscess draining into the urethra, as renal albumin is in the diagnosis of kidney disease. This condition was constantly found in twenty-five patients with inflamed prostates. In two of these, with acute prostatitis, the first urine for a few days, showed as much as 1 per cent. of proteid, without evidence of renal disease at any time. The test was negative in fifteen patients with healthy prostates and vesicles. The recognition of this prostatic and vesicular proteid affords a very simple method of making a positive diagnosis of prostatitis and seminal vesiculitis (when in excess) and is available in mild obscure cases whether a microscope be at hand or not. A study of these secretions had led Ballenger to the conclusions that spermatorrhea, instead of being a neurosis or due to a patulousness of the seminal ducts, is really caused by a low-grade inflammation of the seminal vesicles and the ampullations of the vas deferens, which should be borne in mind in the treatment of these conditions. The inflammation causes an increase in the secretion which mechanically washes out the spermatozoa.

36. **Urethral Disturbance.**—In the past year Swinburne has had twenty-six cases of oxaluria, presenting a variety of symptoms, but the greater number of these cases show the same general set of symptoms. There is a history of a previous gonorrhea of a recent or remote date; ever since the attack there has been a persistent burning pain in the canal, usually at the end of urination, sometimes quite sharp and of a nagging character. Some patients have been the victims of every sort of application their physicians could think of and have been their despair. There may or may not be present a mucopurulent discharge; generally they show nothing but a few shreds in the urine. Such patients have been told it was their imagination; that they were cured. All have oxaluria; some cases have yielded readily to treatment, other patients persist with their symptoms and their oxaluria in varying degree, sometimes better and sometimes worse. Some of these cases are apt to develop renal calculus.

Journal of Cutaneous Diseases, New York.

October.

38 *Infectious Dermatitis Gangrenosa. G. W. Wende and C. A. Bentz, Buffalo, N. Y.
39 Case of Parakeratosis Variegata. H. G. Anthony, Chicago.
40 An analysis of Sixty-Five Cases of Bullous Diseases of the Skin. W. T. Corlett, Cleveland.
41 *Case of Multiple Keloid. E. D. Newman, Newark, N. J.

38. **Infectious Dermatitis Gangrenosa.**—Wende and Bentz report a case of infectious gangrene, first shown by a bullous eruption, changing to necrosis, variable in distribution and extent, apparently originating through autoinoculation from a chronic leg ulcer. There was absence of constitutional symptoms during development of the skin lesions; secondary general infection and death from septicemia. In the bullæ and gangrenous lesions of the skin during life, as well as in the internal organs at the autopsy were found streptococci, staphylococci, diplococci and bacilli.

41. **Multiple Keloid.**—Newman reports the case of a man, aged 49, white, miner, who had a large number of keloidal growths, situated on his forehead, scalp, neck, chest, back, groins, arms and lower extremities; they are of variable size, measuring from 8 mm. to 20 cm. in length, and from 8 mm. to 18 cm. in width. The growths cause him no inconvenience whatever.

Journal of Mental Pathology, New York (Vol. vii, No. 5).

42 A Cretin Dog and Its Thyroid Apparatus. U. Cerletti and G. Perusini, Rome Italy.
43 *Genesis of Genius. L. G. Robinovitch, Paris.

43. **Genesis of Genius.**—Robinovitch states that an examination of a number of biographies shows that: 1. The majority of great men were not the issues of youthful parents, and a very small minority only were first offspring. 2. The majority of great men were born when their parents were nearer thirty years of age and above, than twenty or below. 3. The majority of great men were the youngest offspring, and in some instances even the youngest offspring of the youngest offspring, while only a small minority were first born. 4. In other words, parents who have reached the age of mature cellular potentiality are most apt to give birth to great men and geniuses. 5. Youthful parents seldom give birth to gifted children because such parents have undeveloped systems, with potential energy that is below par. There is a period in the lives of the parents when their cellular potentiality is at its height, and the offspring conceived at such a period, is fortunate indeed.

Archives of Pediatrics, New York.

October.

44 *Septic Endocarditis. B. K. Rachford, Cincinnati.
45 Health of New York School Children from the Point of View of the Department of Health. J. J. Cronin, New York.
46 *Relation of Weight to the Measurements of Children During the First Year. E. C. Fleischner, New York.

44. **Septic Endocarditis.**—Rachford reports a case of septic endocarditis which later became ulcerative. The patient, a boy, was suffering from a moderately severe attack of scarlet fever. There was a previous history of pertussis and repeated attacks of severe tonsillitis. During the attack of scarlet fever the child suffered severely from sore throat and a non-suppurative adenitis involving the cervical glands, especially on the left side. About the fifth day an endocarditis was discovered, which ran a moderately severe course, resulting in cardiac hypertrophy and permanent injury to the mitral valve. At no time did the urine contain albumin or casts. Thirty-five days after entering the hospital, there were slight fluctuations in the temperature, which were thought to be due to the adenitis. The heart was slightly enlarged and there was a systolic murmur at the apex transmitted outward, but there were no signs of cardiac distress or other evidence of acute disease of the heart. The temperature soon became normal, the cervical glands were gradually reduced in size, and the child's general condition steadily improved, until sixty-eight days after entering the hospital, when convalescence seemed established, he was sent back to the Children's Home in a fairly good condition.

Six days later the child was returned to the hospital with a temperature of 103.5 F. and severe ulcerative tonsillitis. An examination revealed that he was suffering from a severe ulcerative stomatitis in addition to the tonsillitis referred to. The cervical glands were again very much enlarged and the left side of the face was swollen from an ulcer on the mucous membrane of the cheek that had been started by a ragged

tooth. The systolic murmur at the apex was louder and rougher; the heart action was slightly irregular, its dulness was increased, and palpation revealed a thrill at the apex. It was apparent from the history and from the child's present condition that he was suffering from a new infection which had entered through the tonsils and produced systemic intoxication and a second attack of endocarditis. The treatment ordered embraced a cathartic, rest, quiet, fluid diet, small doses of whiskey and antiseptic washes for the mouth and throat. The tonsillitis finally disappeared, but the stomatitis and ulceration on the inside of the left cheek continued giving a very fetid odor to the breath. The patient finally developed a fine purpuric rash over the whole body, and the discharges from the bowels contained some blood and mucus. Three weeks later a well-developed measles rash appeared. At this time the stomatitis, which had continued, became very much worse, and the ulceration on the inside of the left cheek had spread to such an extent that the whole cheek was swollen and a distinct area of tumefaction was developed. The child died about four and a half months after the onset of the illness.

46. **Relation of Weight to the Measurements of Children.**—Fleischner summarizes his paper as follows: (1) The height and circumference of head, chest and abdomen in normal well-nourished children increase as the weight. (2) The height, and the circumference of the head and chest in fairly well-nourished children likewise increase primarily as the weight, although in this class of patients, age plays more of a part than in the well nourished. (3) It is in the poorly nourished children that age plays its most important part, and the measurements of these children, compared with the well nourished, increase most rapidly in the last part of the year. (4) In the poorly nourished children, most of whom are probably somewhat premature, when the weight is below normal, all the measurements are correspondingly below normal. (5) When the weight is stationary the increase in the measurements is very small, depending on the slight influence which age has on the growth of the infant notwithstanding the weight. (6) The measurements of infants of the same weight, notwithstanding the age, are very similar. The small difference depending, as when the weight of a child is stationary, on the very slight influence of age on growth. (7) The final conclusion can be drawn that during the first year of life the primary factor in the increase of the measurements of the body is steady, consistent increase in the weight, the influence of age being secondary and much less important.

Southern California Practitioner, Los Angeles.

October.

47 Vienna: Its Opportunities for Postgraduate Work. D. Fulton, Los Angeles.
48 *Drainage. H. S. Gordon, Santa Ana.
49 Meningitis. W. H. Roberts, Pasadena.
50 Cancer. W. B. Power, Redlands.
51 *The Substance and the Shadow in Medicine. W. B. Sawyer, Riverside.
52 Labor. C. Magee, Los Angeles.

48. **Drainage.**—Gordon advocates early drainage in acute pelvic inflammation because the clinical picture does not always tell what the final result may be. A fatal sapremia may not produce marked constitutional symptoms at the beginning, yet the patient may die in forty-eight hours from the initial chill, or the streptococci may be rapidly invading the tissues outside the uterus and a fatal peritonitis result. After the pus has formed outside the uterus the most conservative would institute drainage, but why, he asks, wait for this and risk the chance of septicemia, pyemia or general peritonitis? Why not drain earlier and avoid this risk to the patient, and reduce the mortality in such cases to a minimum.

51. **Substance and Shadow in Medicine.**—Sawyer discusses the underlying principles of the practice of medicine, its relations to the other learned professions, and within, to isms and pathies; the true aim of medicine, the veritable doctor, the quack, the causes of quackery, the attitude of the press, the attitude of the clergy, the attitude of the legal profession, the so-called old school; homeopathy, Christian science, osteopathy, eclecticism, and out-and-out quackery.

Journal of Nervous and Mental Disease, New York.

November.

53 The Cerebral Element in the Reflexes and Its Relation to the Spinal Element. G. L. Walton and W. E. Paul, Boston.
54 Case of Landry's Paralysis, with Recovery. W. Sinkler, Philadelphia.
55 *Limited Area of Anesthesia, Epileptiform Attacks of Hemialgesia, and Early Muscular Atrophy in a Case of Brain Tumor. M. Prince, Boston.
56 Sexual Infantilism with Optic Atrophy in Cases of Tumor Affecting the Hypophysis Cerebri. H. Cushing, Baltimore.

55. **Limited Area of Anesthesia.**—Prince reports a case showing as the result of a cerebral lesion: (1) Circumscribed limited area of anesthesia; (2) marked muscular atrophy, appearing early; (3) epileptiform attacks of hemialgesia of a peculiar nature; (4) loss of the muscular sense, artereognosis, ataxia and paresis, increasing to ultimate paralysis. The diagnosis was that of cerebral tumor, located primarily in the cortical arm area, probably centralized in the postcentral convolution, and from there extending backward into the parietal region and forward into the anterior central convolution. In the hope of relief, an operation was recommended, and done. The findings, taken in connection with the history of the case, are compatible with the theory that the postcentral convolution is sensory, including both the tactile and muscular senses, and possibly stereognosis. The interesting points in the case are: The original limitation of the (tactile) anesthesia to the neck and side of the head, conforming to the view that there is a focal localization of sensation in the cortex, as with movements; the slight degree of its intensity; the peculiar attacks of pain, spreading by segments; and the muscular atrophy. The last, in the beginning, was out of proportion to the paralysis. The patient died.

New York State Journal of Medicine.

October.

57 Methods of Research into the Causes of Epilepsy. W. P. Spratling, Sonyea, N. Y.
58 *Sterile Water Anesthesia in the Operative Treatment of Diseases of the Rectum and Anus. S. G. Gant, New York.
59 Phlebitis Following Aseptic Abdominal Operations. A. T. Bristow, Brooklyn, N. Y.
60 Prevention and Treatment of Eclampsia. B. Cohen, Buffalo, N. Y.
61 Procidentia Uteri. R. Waldo, New York.
62 Henry Darwin Didama. J. L. Heffron, Syracuse, N. Y.
63 History of the Medical Society of the State of New York. (To be continued.) J. J. Walsh, New York.

58.—This is practically identical with the article which appeared in the *New York Medical Journal*, Oct. 13, 1906.

Wisconsin Medical Journal, Milwaukee.

October.

64 Surgical Shock. J. S. Reeve, Appleton.
65 Relation of Blood Pressure to Surgery. A. H. Levings, Milwaukee.
66 Submucous Resection of the Nasal Septum. R. H. Brown, Chicago.
67 Treatment of Sepsis. J. M. Dodd, Ashland.

Fort Wayne Medical Journal-Magazine.

October.

68 Six Simultaneous Cases of Scarlet Fever in one Family. H. J. Burwash, Chicago.
69 Management of Chronic Glandular Affections. L. P. Drayer, Ft. Wayne.
70 Vaccinia. H. O. Bruggeman, Ft. Wayne.
71 Retrodeviation of the Uterus. A. S. Jaeger, Indianapolis.

Columbus Medical Journal.

October.

72 Anal Fistula. E. A. Hamilton, Columbus.
73 Present Position of Radiation in Treatment. G. Sichel, London, England.
74 *Results of Operative Treatment of Varicose Veins of the Leg by the Methods of Trendelenburg and Schede. R. T. Miller, Jr., Baltimore.

74.—See abstract in THE JOURNAL, Sept. 29, 1906, page 1057.

Journal of the South Carolina Medical Association, Greenville.

October 21.

75 Are we Doing our Full Duty by the Laity? S. C. Baker, Sumter.
76 Surgical Shock. E. D. Tupper, Summerville.
77 Syphilis of the Ear. W. P. Porcher, Charleston.
78 Headaches; Cause and Cure. E. W. Carpenter, Greenville.
79 Practice of Ethics. J. L. Fennel, Waterloo.

Brooklyn Medical Journal.

October.

80 Hemorrhagic Disease of the Newly Born. (To be continued.) C. H. Goodrich, Brooklyn.
81 Tuberculous Osteitis. W. C. Schoenijahn, Brooklyn.
82 Case of Hysteria due to Eyestrain. G. M. Gould, Philadelphia.
83 Case of Mastoiditis in a Boy of 13 Years. Operation Followed by Attacks of Purpura. W. C. Braislin, Brooklyn.

Journal of the Outdoor Life, Saranac Lake, N. Y.

November.

84 Hawaii, A Land of Perpetual Sunshine and Verdure. J. W. Girvin.
85 Climate of Fort Grant, Graham County, Arizona. I. W. Brewer, Fort Huachuca, Ariz.
86 Some Personal Observations on the Management and Treatment of Pulmonary Tuberculosis at a Climatic Resort. B. Cornick, San Angelo, Texas.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

November 1.

87 Relation Between Pathology and General Medicine. F. F. Wesbrook, Minneapolis.
88 Wear and Care of the Nervous System. L. M. Crafts, Minneapolis.
89 Modern Treatment of Chronic Purulent Otitis Media. C. J. Holman, Mankato, Minn.
90 Operative Treatment of Chronic Empyema of the Maxillary Sinus, with Special Reference to the Intranasal Method. W. R. Murray, Minneapolis.

The Canada Lancet, Toronto.

November.

91 President's Address, Toronto Medical Society, Oct. 4, 1906. R. D. Rudolf, Toronto.
92 Climate of Prescott, Arizona. I. W. Brewer, Ft. Huachuca, Ariz.
93 Health of School Children. A. J. MacKenzie, Toronto.
94 Various Gross Pathologic Conditions of the Urethra as Revealed by the Urethroscope. N. E. Aronstam, New York.

Kansas City Medical Index-Lancet.

November.

95 Retrocecal-Retroperitoneal Appendicitis. C. L. Hall, Kansas City.
96 Impressions of a Recent Trip Abroad. J. Punton, Kansas City.
97 Vertigo. G. W. Robinson, Kansas City.
98 Chronic Mastoiditis. H. G. Tureman, Kansas City.

St. Louis Courier of Medicine.

November.

99 Intubation for the Severe Paroxysms of Pertussis. E. W. Saunders, St. Louis, Mo.

Buffalo Medical Journal.

November.

100 Student Ideals. J. E. King, Buffalo.
101 "End of Season" Illness. W. H. Birchmore, Brooklyn, N. Y.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

October 27.

1 *The Growth of Truth. W. Osler.
2 *Hospital Treatment of Curable Cases of Mental Disorder. E. Goodall.
3 *Some Principles of the Treatment of Fractures. J. E. Bowser.
4 *Bacterioscopic Analysis of Excremental Pollution. E. Klein.
5 Estimation of Blood Pressure. T. Lewis.
6 Present Status of Military Medical Arrangements in Canada. J. T. Fotheringham.
7 *Amino Acids and Metabolism. L. F. Barker.
8 *Over-nutrition and Under-nutrition. R. H. Chittenden.
9 *Some Aspects of Heart Block. Professor Aschoff, J. Mackenzie, J. Erlanger, G. A. Gibson, and others.
10 *Case of Stokes-Adams Disease. J. Barr.

1 and 11. **Growth of Truth.**—In this, the Harveian oration, Osler discourses eloquently on the growth of truth, or the acquisition of the knowledge which makes it possible to solve the most perplexing problems with which the medical man is confronted. Dr. Osler says, in part:

History is simply the biography of the mind of man; and our interest in history, and its educational value to us, is directly proportionate to the completeness of our study of the individuals through whom this mind has been manifested. To understand clearly our position in any science to-day, we must go back to its beginnings, and trace its gradual development, following certain laws, difficult to interpret and often obscured in the brilliancy of achievements—laws which everywhere illustrate this biography, this human endeavor, working through the long ages; and particularly is this the case with that history of the organized experience of the race which we call science.

In the first place, like a living organism, Truth grows, and its gradual evolution may be traced from the tiny germ to the mature product. Never springing, Minerva-like, to full stature at once, Truth may suffer all the hazards incident to generation and gestation. Much of history is a record of the mishaps of truths which have struggled to the birth, only to die or else to wither in premature decay. Or the germ may be dormant for centuries, awaiting the fulness of time.

Secondly, all scientific truth is conditioned by the state of knowledge at the time of its announcement. Thus, at the beginning of the seventeenth century, the science of optics and mechanical appliances had not made possible (so far as the human mind was concerned) the existence of blood capillaries and blood corpuscles. Jenner could not have added to his inquiry a discourse on immunity; Sir William Perkin and the chemist made Koch possible; Pasteur gave the conditions that produced Listèr; Davy and others furnished the preliminaries necessary for anesthesia. Everywhere we find this invariable filiation, one event following the other in orderly sequence—"Mind begets mind," as Harvey says; "opinion is the source of opinion. Democritus with his atoms, and Eudoxus with his chief good, which he placed in pleasure, impregnated Epicurus; the four elements of Empedocles, Aristotle; the doctrine of the ancient Thebans, Pythagoras and Plato; geometry, Euclid" (*De Generatione*).

And, thirdly, to scientific truth alone may the *homo mensura* principle be applied, since of all mental treasures of the race it alone compels general acquiescence. That this general acquiescence, this aspect of certainty, is not reached *per saltum*, but is of slow, often difficult growth—marked by failures and frailties, but crowned at last with an acceptance accorded to no other product of mental activity—is illustrated by every important discovery from Copernicus to Darwin.

The growth of Truth corresponds to the states of knowledge described by Plato in the *Theaetetus*—acquisition, latent possession, conscious possession. Scarcely a discovery can be named which does not present these phases in its evolution. Take, for example, one of the most recent: Long years of labor gave us a full knowledge of syphilis; centuries of acquisition added one fact to another, until we had a body of clinical and pathologic knowledge of remarkable fulness. For the last quarter of a century we have had latent possession of the cause of the disease, as no one could doubt the legitimate inference from discoveries in other acute infections. The conscious possession has just been given to us. After scores of investigators had struggled in vain with the problem, came Schaudinn with an instinct for truth, with a capacity to pass beyond the routine of his day, and with a vision for the whole where others had seen but in part. It is one of the tragedies of science that this brilliant investigator, with capabilities for work so phenomenal, should have been cut off at the very threshold of his career. The cancer problem, still in the stage of latent possession, awaits the advent of a man of the same type. In a hundred other less important problems, acquisition has by slow stages become latent possession; and there needs but the final touch—the crystal in the saturated solution—to give us conscious possession of the truth.

The principal text of this paper is the discovery of the circulation of the blood by Harvey.

2. **Treatment of Mental Disorder.**—Goodall urges that as many recent and curable cases of insanity as possible be treated in mental wards attached to general hospitals, and that the county asylums be employed as convalescent homes for such patients drafted from the hospital. In the matter of prophylaxis Goodall urges the prohibition of marriage to persons released from asylums, and the inflictions of penalties in all cases in which the responsibility for illegitimate procreation among such can be fixed.

3. **Treatment of Fractures.**—According to Bowser, massage and movement may be employed with advantage in the majority of cases of fractures. Extreme mobility of the bony fragments or the existence of displacements capable of being reproduced are contraindications for the employment of massage and movement, at least, as an immediate treatment. The use of simple means to avoid displacement may be combined with massage and movement, the retentive apparatus being usually removed and replaced daily. Bowser advises that complicated apparatus should be avoided.

4. **Bacterioscopic Analysis of Excremental Pollution.**—Klein states that in the bacterioscopic analysis of shellfish, water and other materials polluted with excremental matters the MacConkey medium (sodium taurocholate, peptone, glucose, litmus, water) in Durham fermentation tubes is admittedly of advantage, since it allows the free development of *B. coli communis* and other coli-like microbes, whereas it exerts a certain restraining influence on some other microbes. The second medium which is of great advantage in the analyses is broth with sodium taurocholate. The broth is ordinary nutrient beef broth, to which sodium taurocholate is added in the same proportion as phenol in Parietti broth; that is, 5 c.cm. of a 5 per cent. solution to 400 c.cm. of broth.

7. **Amino Acids in Metabolism.**—It appears that the whole series of proteins consists essentially of simple amino acids, the chains being quantitatively and qualitatively variously formed. Obviously these amino acids must form the basis of the whole protein metabolism. Barker discusses some of the medical problems to be or to some extent even already illuminated by the application of the chemistry of the amino acids and the change which they form.

8. **Over-Nutrition and Under-Nutrition.**—Chittenden refers to feeding experiments carried out on 11 men who lived for a period of five consecutive months with a proteid metabolism corresponding to from 7 to 8 grams of nitrogen a day, with maintenance of body weight, nitrogen equilibrium, and without

discomfort or loss of bodily vigor. All these men showed a very decided gain in muscular strength while living on this lowered proteid intake. Chittenden is of the opinion that the physiologic evidence so far accumulated by dietetic experiment on man, reinforced by the more or less reliable evidence of thousands of individuals living at a lower level of proteid metabolism, indicates that the normal requirements of the body for proteid food do not demand more than one-half the amount called for by existing standards. In his judgment the daily consumption of proteid food far beyond the amount required to maintain health, strength, mental and physical vigor, body weight and nitrogen equilibrium, constitutes a form of over-nutrition as serious in its menace to the health and welfare of the human race as many other evils more striking in character. Chittenden believes that there are more people suffering to-day from over-eating, over-nutrition, than from the effects of alcoholic drink.

9. **Heart Block.**—Aschoff reports the results of investigations made by his pupil, Tawara, on 112 hearts with reference to heart block. Tawara's investigations established the fact that both in man and in all the animals examined the bundle of His begins in the neighborhood of the anterior edge of the coronary vein, and then passes forward on the right side of the auricular septum below the foramen ovale, lying close on the auriculoventricular septum, which passes obliquely from the left above to the right below. Just above the place of insertion of the median flap of the tricuspid valve, and before it makes its way into the auriculoventricular connective tissue septum proper, this muscle bundle forms a special knot-like thickening produced by a confused mass of muscle fibers. From this knot a process arises which penetrates the fibrous septum, and runs along just below the pars membranacea septi and dorsal to the muscular ventricular septum, dividing then into two main branches, which pass obliquely downward, one on either side of the ventricular septum under the endocardium. For a full and complete description of these findings the reader is referred to the original article.

10. **Stokes-Adams Disease.**—Barr found that when his patient took a long, deep breath and then held his chest expanded as long as possible, the following events occurred: During the deep inspiration there were two beats of the heart and two pulses at the wrist; then the pulse disappeared in the carotid, brachial, radial and femoral arteries, and remained absent for several beats. At the same time the impulse of the heart disappeared, and the clear, loud first sound and systolic murmur were replaced by a low, dull-toned, obscure sound, and the second sound was not audible. After four or five systoles, which Barr attributed to the right ventricle, the clear first sound and systolic murmur and the double second sound reappeared and were associated with a return of the pulse in all the arteries, while the man's chest was still expanded. Here undoubtedly the blood was stored up in the lung reservoir, and the proper systoles of the left ventricle and the pulse in the arteries did not appear until the reservoir overflowed. The patient had several epileptic seizures during the periods of suspended breathing with the chest expanded. These attacks always occurred after the pulse had ceased for about 20 seconds. The patient died with symptoms of heart block. Barr is not convinced that the usual explanation of some degenerative changes in the auriculoventricular bundle of His can satisfactorily account for the phenomena of this disease.

The Lancet, London.

October 27.

11 *The Growth of Truth. W. Osler.
12 Words and Things. T. C. Allbutt.
13 Some Aspects of Dilatation of the Heart. A. M. Gossage.
14 *A Series of Cases Treated by the Injection of Bacterial Vaccines. E. Turton and A. Parkin.
15 *Detection of Sugar in Urine and Its Significance in Connection with Life Assurance. A. M. Kellas and F. J. Wethered.
16 *An Unusual Case of Thrombosis of the Lower Part of the Lateral Sinus, of Aural Origin. A. Bronner.
17 *Case of Pericarditis Following Head Injury; Paracentesis. J. Gillan.
18 *Disinfectant Properties of Hypochlorites of Sodium and Magnesium as Produced by Electrolysis. D. Sommerville and J. T. A. Walker.
19 Case of Poisoning by "X. L. All Vaporizing Fumigator." E. J. Blackett.

11.—See abstract No. 1 on preceding page.

14. **Treatment of Bacterial Vaccines.**—The plan followed by Turton and Parkin has been to treat each case on its merits, usually beginning with a small dose, watching the behavior of the opsonic index and continuing the dose, increasing or diminishing it as the occasions demanded. Previous to treatment they ascertained the exact causal germ of the disease and estimated the opsonic index of the patient for that particular germ. The authors are extremely pleased with the results obtained by this treatment. The amount of benefit derived from the treatment varied in each case. The acute cases were the more difficult to cure, because there was not always time enough to raise the opsonic power to such a degree as to influence the course of the disease. Among the conditions treated were bacillus coli infections, tuberculous infections of the skin, kidney, lungs, bones, intestines and lymph glands, and staphylococcus infections. In 4 cases the treatment failed absolutely. These were 2 advanced cases of pulmonary tuberculosis, a hopeless case of hip and spinal disease, and a case of tuberculous meningitis.

15. **Detection of Sugar in Urine.**—The following method is considered by Kellas and Wethered as the most convenient when testing for sugar in the urine for life-insurance purposes. Either dilute the urine until its specific gravity is from 1012 to 1015 (e. g., a urine of specific gravity from 1025 to 1030 would require dilution with an equal volume of water) and then mix with an equal volume of Fehling's solution, or add a large proportion of Fehling's solution as indicated above; then boil for a few seconds. If no precipitate forms within two minutes it may confidently be concluded that there is no sugar present of pathologic import; 0.4 per cent. or more would generally under such conditions give an orange to red precipitate within one minute of reaching the boiling point, while from 0.2 to 0.25 per cent. would give a precipitate within two minutes. The authors state further that these safranan tests if used as an auxiliary to the Fehling test might alone be sufficient to settle troublesome cases in which small quantities of sugar and large quantities of creatinin cause the latter test to be uncertain.

16. **Thrombosis of Lateral Sinus.**—Bronner's case, which followed mastoid disease, never presented any swelling or tenderness over the mastoid or over the jugular vein. The walls of the lateral sinus were practically normal and the thrombosis was situated low down in the bulb of the jugular.

17. **Pericarditis Following Head Injury.**—Gillan's patient was injured by a large wheel, the wound extending from the upper part of the posterior triangle of the neck to the parietal eminence, and passing immediately behind the auricle. There were no signs of brain compression or irritation, but it seemed clear that there was some septic condition within the skull, probably a septic meningitis. About five weeks after the infliction of the injury the pericarditis manifested itself. On the seventh day of the existence of this complication six ounces and six drams of fluid were removed by paracentesis. Two days after tapping the temperature fell to normal. The remainder of the fluid was absorbed so quickly that at the end of a week the cardiac dulness seemed normal.

18. **Disinfectant Properties of Hypochlorites.**—The experiments made by Sommerville and Walker showed that the hypochlorites produced by electrolysis, like all hypochlorites, are unstable and, in the presence of organic matter, untrustworthy disinfectants.

Journal of Tropical Medicine, London.

October 15.

20 Principles of Diet in Tropical Campaigns. A. Duncan.
21 Food of the Natives of India. G. H. Fink.
22 Food and Digestion in Warm Climates. J. Cantlie.

The Clinical Journal, London.

October 10.

23 *Cases of Disease of the Spinal Cord. N. Moore.

October 17.

24 *Duodenal Ulcer. R. Hutchison.
25 Nasal Obstruction; Submucous Turbinectomy. W. Stuart-Low.

October 24.

26 *Some Cases of Gallstones. J. Bland-Sutton.
27 Diseases of the Abdomen. W. H. Allchin.

23. **Disease of Spinal Cord.**—This is a clinical lecture, in which Moore discusses 5 cases, one of Morvan's disease, a case of transverse myelitis, one of poliomyelitis and 2 cases of locomotor ataxia.

24. **Duodenal Ulcer.**—Hutchison believes that it is right to try medical treatment first in doubtful cases, but that when the diagnosis is no longer in dispute no time should be wasted, timely gastroenterostomy insuring a cure in almost every case.

26. **Cases of Gallstones.**—Bland-Sutton reports the following cases: 1. Bilateral salpingitis with calculous mucocele of the gall bladder. A cholecystectomy was done and the patient made an uneventful recovery. 2. Bilocular (hour-glass) stomach due to perforation of this viscus by gallstone. The left (cardiac) loculus was anastomosed with the jejunum, and the perforation in the wall of the pyloric loculus was sutured to the peritoneal edges of the wound and drained externally. The patient made an uninterrupted recovery. The fistula closed in 10 days. 3. Intestinal obstruction by a gallstone impacted in the ileum about six inches from the ileocecal valve. By careful manipulation of the bowel the stone was made to pass through the valve into the large bowel. It was passed four days after the operation. The gallstone had ulcerated its way from the gall bladder into the duodenum. It measured three inches in circumference around its minor axis and was about an inch and a half long. 4. Recurrence of gallstones after operation. The two attacks occurred five years apart and in both instances a single large stone was removed. 5. Acute calculous cholecystitis in a patient 76 years of age. The cystic duct was firmly plugged by a calculus and the gall bladder contained many pure white cholesterin calculi. A cholecystectomy was done and the patient recovered.

Medical Press and Circular.

October 17.

28 *Therapy of Exophthalmic Goiter. Professor Schlesinger.
29 Actinomycosis of the Vermiform Appendix. T. H. Kellock.
30 Tuberculous Cervical Glands. J. Marnoch.
31 *Future Prospects of the Medical Profession. L. H. Ormsby.

October 24.

32 Surgical Aspects of Tuberculous Peritonitis. F. J. Steward.
33 *Three Cases of Uterine Fibroids of Unusual Interest. F. B. Jessett.
34 Earliest Possible Recognition of Malignancy in Tumors. F. T. Paul.
35 Diagnosis of Some Forms of Dyspepsia. W. G. Barras.

28. **Therapy of Exophthalmic Goiter.**—Schlesinger vouches for the value of phosphorus in the treatment of exophthalmic goiter. He usually prescribes half a milligram in a pill and gives two pills daily. The same quantity of phosphorus may be given in cod-liver oil. In prescribing arsenic he has used for several years the cacodylates. Sodium cacodylate, he states, may be given in 1 or 2 cg. doses by the mouth or intramuscularly without danger. Strychnin, as a tincture, may be given with quinin for tonic purposes with great benefit. To relieve him Schlesinger favors a mixture consisting of ammonium bromid, 0.2 gm; codein phosphate, 0.1 gm, and sodium bromid, 1 gm.

31. **Future Prospects of Medical Profession.**—Ormsby discusses the army and navy medical services as a career for the practitioner of medicine.

33. **Uterine Fibroids.**—Jessett reports 3 cases. In the first case the fibroids, which had become calcified, were removed and the patient recovered. The case was of interest on account of the relative absence of symptoms pointing to the presence of fibroids of the uterus. There was no enlargement of the abdomen, no interference of the functions of the rectum or bladder, and no hemorrhage. The second case was one of severe menorrhagia caused by fibroid of the fundus of the uterus which was removed by vaginal hysterectomy. The third case was one of pelvic abscess of unknown origin.

Annales de Dermatologie, Paris.

Last indexed, page 76.

36 (VII, No. 5.) *Etude de la nutrition dans les dermatoses. L. Brocq and J. Ayrignac.
37 (No. 6.) *Cas d'épithéliomatose de Paget à forme pigmentaire. Une théorie du cancer du sein. C. Audry.
38 *Xéroderma pigmentosum; 2 cas. J. Nicolas and M. Favre.
39 *Sclérose atrophique de la peau et myosite généralisée. G. Petges and C. Clejat.
40 Fibromes miliaires folliculaires; sclérodermie consécutive. W. Dubreuilh.
41 (No. 7.) *Erythème cutané en larges placards extensifs avec atrophodermie à type maculeux chez un tuberculeux. J. Nicolas and M. Favre.
42 *L'apoplexie hepatique dans la syphilis. Ruptures spontanées du foie. E. Devic and L. Bériel.
43 Chancres syphilitiques nains de la lèvre et de la langue (dwarf chancres on lip and tongue). B. Bord.

36. **Nutrition in Various Dermatoses.**—For six years Brocq and Ayrignac have been conducting research on this subject with a perseverance worthy of more brilliant results. They found in psoriasis that the urine is modified to a certain extent but variously in different cases, without any characteristic changes. They urge that in the study of nutrition the patients should be put on a special, standard diet as the findings differ according to the food ingested. As a general impression from their research on psoriasis, they believe that various causes may induce the affection or that it may develop on different soils.

37. **Paget's Epitheliomatosis.**—Audry reports a peculiar case of Paget's disease in a brunette of 54. She had nursed two children, but with the left breast only, owing to abscesses in the right breast the first time. The right breast was the one affected. Histologic study of this case and of three others in his experience has convinced him that the entire mammary apparatus may be regarded as a simple nevus, according to Unna's ectodermic conception of nevus carcinoma. The importance and the frequency of clinical carcinomata originating in a soft nevus, and the reticulated and carcinomatous structure of such tumors, entirely distinct from the structure of other cutaneous epitheliomata, demonstrate the analogy between mammary carcinoma and cutaneous carcinoma developing from a nevus. In consequence he concludes that mammary carcinoma should be considered a cutaneous nevus carcinoma according to Unna's meaning of the term.

38. **Xeroderma Pigmentosum.**—One of the two patients whose cases are described was a child of 2 and one a woman of 71. The latter lived an out-of-door life and the exposed regions were those affected, as also on the child. The affection was more serious and progressive in the child, but great improvement was noted after an attack of measles. The epitheliomata dropped off and some of the warty growths retrogressed, but the other features of the affection persisted unmodified and the improvement will probably be transient. Similar transient improvement was obtained in the other case by Roentgen treatment.

39-41. **Atrophic Sclerosis of the Skin and Generalized Myositis.**—The diagnosis in the case described was extremely difficult. The edema first noticed suggested Quincke's disease. Incipient sclerodermia is often confounded with this affection or with myxedema. The progress of the case suggested sclerodermia, but differed in several respects from the classic types. The diagnosis was finally modified to atrophic sclerosis of the skin with generalized myositis in a possibly tuberculous patient. Hypertrichosis was observed, paralleling the erythematous lesions, especially on the hands. Tuberculosis had been merely suspected before death as there was not the slightest expectoration, and percussion and auscultation were out of the question on account of the spontaneous sufferings of the patient and the intense pain elicited by the least pressure on the thorax. Autopsy revealed large cavities in both lungs. The histologic lesions were those of sclerodermia, with small bodies of an indeterminate nature in the derma and epidermis. Petges and Clejat ascribe the syndrome to tuberculous toxi-infection from the ulcerative foci in the lungs, which were swarming with bacilli.

Nicolas and Favre describe another type of dermatosis developing in a tuberculous patient which they attribute to the same cause, impregnation of the organism by the tuberculous toxins. They call the case a toxi-tuberculide with extensive erythematous patches and skin atrophy of the macular type.

42. **Apoplexy of the Liver in Syphilis.**—Devic and Bériel report a case and summarize twenty from the literature in which sudden and profuse intraparenchymatous hemorrhage in the liver produced hepatic apoplexy. This group of spontaneous ruptures of the liver exists apart from the group of traumatic lesions of the organ, and may include cases of dubious origin. The apoplexy of the liver may be the result

of rupture of vessels or of a hemorrhagic infarct. Syphilis may be regarded as the most common cause of these accidents on account of the vascular lesions which it engenders.

Semaine Médicale, Paris.

44 (XXVI, No. 42.) *Revision de la question de l'aphasie: que faut-il penser des aphasies sous-corticales (aphasies pures)? P. Marie.

44. **Revision of the Question of Aphasia.**—Marie's revolutionary views were summarized and discussed in THE JOURNAL, Aug. 11, 1906, page 436. He rejects the distinction between cortical and subcortical aphasia, declaring that aphasia from a focal lesion is never exclusively cortical; the white substance seems to play as important a part as the grey in the pathologic physiology of aphasia. The various forms of aphasia are linked together by a host of transitions, but it is possible to distinguish between an intrinsic aphasia in which the zone of Wernicke (zone of language) or the fibers derived from it are directly and notably affected by the lesion (aphasia of Broca, of Wernicke), and an extrinsic aphasia in which the zone of Wernicke with its fibers is not directly involved. The lesion is located outside of this zone either in the lobulus lingualis and fusiform lobules (pure alexia, pure word blindness), or in the zone of the lenticular nucleus (pure anarthria, pure motor aphasia). The third, left frontal convolution plays no special rôle in the function of speech. The true language center is in the zone of Wernicke. It should not be regarded as solely a sensory center, but an intellectual center. Every lesion of this center determines in proportion to its extent, besides the disturbances in the power of speech, a defect in the comprehension of spoken words and in the capacity for reading and for writing, as also the loss of certain ideas of a didactic order. Anarthria is characterized clinically by loss of the power of speech with retention of comprehension for words in reading and writing. It is produced by a lesion in the lenticular zone, the lesion interfering with the coördination of the movements necessary for the articulation of words, without true paralysis of the muscles. The aphasia of Wernicke is produced by a lesion in the zone of Wernicke. Marie here presents an array of clinical and postmortem findings to sustain these views, and replies in detail to various objections that have been urged against them.

Dermatologische Zeitschrift, Lassar's, Berlin.

Last indexed xlvi, page 164.

45 (XIII, No. 1.) *Action of Finsen Light on Normal Skin.—Wirkung des konzentrierten elektrischen Bogenlichtes (nach Finsen) auf die normale Haut. K. Zieler.
46 Anatomie und Klinik der Monilethrix (Aplasia pilorum intermittens). J. Guszman.
47 *Zur Uebertragung der Alopecia areata (transmission). T. Mayer.
48 *Unglückliche Zufälle bei Hg.—Injektionen (to avoid mercurial enteritis). Harttung.
49 (No. 2.) Zur Klinik des Favus. F. Paulus.
50 Dellenbildung bei Lichen ruber planus der Schleimhaut (of mucosa). H. Vörner.
51 (No. 3.) Zur Histologie der Mykosis fungoides. A. Brandweiner.
52 Zur Anatomie des Favusscutulum (crust). F. Paulus.
53 (No. 4.) Ueber konjugale, familiäre Lepra and erblich lepröse Entartung (Paraleprose). K. Hirschberg (Riga).
54 Fall von Urticaria pigmentosa maculosa. H. Vörner.
55 2 gebessertem resp. geheiltem Sarkom mit Hülfe von Röntgen-Strahlen. L. Stembo.
56 Der Hautfarbstoff als Schützmittel und der partielle Albinismus (protecting action of skin pigment). F. B. Solger.
57 (No. 5.) Lichen ruber pemphigoides. G. Trautmann.
58 Strichförmige Hauterkrankungen (linear cutaneous affections). L. Fischel.

45. **Action of Finsen Light on Normal Skin.**—Zieler's experiments all confirmed the assumption that the essential action of the Finsen light on the skin includes necrosis as the primary effect, affecting predominantly the more susceptible elements, the cells (epithelium, glands, endothelium, etc.), rather than the connective tissue. The action includes further an acute inflammatory hyperemia caused by reflex action from irritation of the vascular system, accompanied by serous or serofibrinous exudation with migration of leucocytes, hemorrhages, stasis and thrombosis. The acute inflammatory reaction is the essential factor in the curative process in Finsen treatment.

47. **Transmission of Alopecia Areata.**—Mayer relates that twelve out of thirty-five policemen attached to a certain station developed alopecia areata in turn. When temporarily off duty they were in the habit of sleeping in beds at the station, and the patches of alopecia developed in all on the parts of the head that came in contact with the pillows. He adds a few examples of similar transmission of the affection among children.

48. **To Avoid Enteritis During Mercurial Treatment.**—Harttung has had occasion several times to observe alarming, acute hemorrhagic enteritis develop in the course of mercurial treatment, frequently intractable to all ordinary measures. His attention was called to a statement of Kobert's in regard to the remarkable tolerance of opium eaters for corrosive sublimate. He has known an instance in which 1.8 gm. of corrosive sublimate was taken daily by an opium eater without untoward effects. He ascribes this to some combination of the opium and the sublimate in the intestines, resulting in an insoluble compound which is harmlessly evacuated. Harttung applied the knowledge thus learned to the treatment of enteritis, and found that opium, given at the first symptoms, immediately arrested the trouble. All the symptoms subside at once and no further complications are observed. The mercurial treatment can be continued without further mishap. He now warns patients, commencing mercurial treatment, of the possibility of acute hemorrhagic enteritis from the effects of the mercury, and gives them some opium drops to take if symptoms develop. His experience has been invariably favorable.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

59 (XXXII, No. 41.) *Examination of the Heart When Lying on Left Side.—Ueber die Untersuchung des Herzens in linker Seitenlage. Goldscheider.
60 Die Indikations-Stellung zur Behandlung der Geburt bei Beckenenge (management of birth with contracted pelvis). J. Pfannenstiel.
61 *Ueber die primäre Tuberculose der Milz (spleen). F. Franke.
62 Ileus durch Obturation der Flexura coli sinistra. P. Manasse.
63 Gibt es eine chronische Appendicitis? Oberndorfer.
64 Behandlung der Herzmuskelschwäche mit elektrischen Strömen (electric treatment of weakness of the heart muscle). Tilliss.
65 Ueber Embryonale Transplantation. H. Spemann.
66 *Die sogenannte Schul-Anämie (school anemia). Unruh (Dresden).
67 Ueber schmerzlose Injektion löslicher Quecksilbersalze (painless mercurial injections). T. Mayer.

59. **Examination of Heart When Lying on Left Side.**—If a person lies on his back and then gradually rolls over on the left side, the apex of the heart will sometimes become displaced until the beat can be felt on the axillary line. The axis of the heart is directed toward the left and the apex is thus brought into closer contact with the wall of the thorax and for more of its extent, and the interspaces are wider. In some cases in which the tense pulse and pronounced second aortic sound indicated hypertrophy, Goldscheider reports that certainty was not obtained until the heart was examined with the patient lying on the left side, when the apex beat became much more distinct. He adds that it is possible to outline the left limit of the heart with great precision by percussing while the patient gradually rolls from the left side on his back, especially in case of dilatation toward the left. In a large number of patients, mostly arteriosclerotic, the heart was examined as they lay on the left side. In the majority of those with sound hearts the apex beat became displaced from 2 to 8 cm. toward the left. In 11 cases in which it was impossible to distinguish the apex beat, either reclining, sitting or standing, it became evident in 6 as soon as the patients turned toward the left side. In arteriosclerosis the displacement of the apex toward the left was constant and pronounced, and in 76 per cent. the displaced apex presented considerable resistance. In 2 cases in which no other sign of hypertrophy could be detected it was revealed by this resistance of the apex. Cardiac defects were almost invariably accompanied by this displacement of the apex beat. The phenomenon is not so striking in case of much hypertrophy or dilatation as in the incipient or mild cases of hypertrophy of the left ventricle with slight dilatation, which may first be revealed by the resistance of the displaced apex beat. The displacement of the apex beat is most pronounced in cases of sclerosis of the arch of the aorta. The amount of displacement is not so pronounced as the change in the force of the apex beat, especially in cases accompanied by dilatation. The finding of a resistant apex beat does not suggest atheromato-

sis of the aorta, but rather increased blood pressure, increased work on the part of the heart or hypertrophy of the left ventricle. The displacement is more marked in the absence of excessive dilatation or hypertrophy and of stasis in the lungs, which impede the displacement. It occurs with or without arteriosclerosis, although in the great majority of cases signs of the latter are evident. The patient should breathe deep in case the apex beat does not become evident with ordinary breathing, and he must relax his muscles.

61. **Primary Tuberculosis of the Spleen.**—Franke reports a case, which he says is the twenty-ninth on record, of primary tuberculosis of the spleen. The spleen was removed in 10 cases, and 7 of these patients were permanently cured. He removed the spleen in his case, but recovery was delayed by pleuropneumonia, first on one side and then on the other, and the patient was removed from the hospital too soon and died on the way home, possibly from pulmonary embolism. The diagnosis of primary tuberculosis of the spleen is not an easy matter. Cyanosis was observed in only 3 of the 29, and in many cases the blood findings were normal. The tuberculin test and an exploratory laparotomy are indicated in dubious cases. Since Vanverts in 1897 collected 295 cases of splenectomy to sustain his assertions that the spleen is not an indispensable organ, further experience has confirmed his views, so that it is now accepted that the spleen can be removed even on mere relative indications. If splenectomy were done oftener and earlier, many lives would be saved and long illnesses prevented, Franke affirms, mentioning his removal of the spleen, which was enlarged to three or four times its normal size, in a case four years ago. The idiopathic hypertrophy of the spleen in this case was probably due to chronic influenza from which the woman had long suffered, and which may be a more frequent cause of hypertrophy of the spleen than is generally recognized. The patient was then so weak and anemic that she could scarcely walk, but she is now well and active.

66. **The So-called School Anemia.**—Unruh ascribes to myocarditis, albuminuria or hypoplasia of the heart and large vessels a large proportion of the disturbances which are generally attributed to school anemia. He believes that myocarditis occurs much more frequently than is generally recognized, not only after diphtheria and scarlet fever, but after other infections, even mild tonsillitis. The relics of the myocarditic process may persist for years; the tendency to myocarditis seems to increase with age. In albuminuria the child need not be kept out of school, but it must be remembered that muscular exercise is far more liable to arouse a not quite healed albuminuria or to cause a relapse than dietetic errors. Girls are affected more frequently than boys, and puberty is the age generally noted. The school can scarcely be incriminated in this form of albuminuria; treatment requires great circumspection, although not necessarily excluding the child from school. Hypoplasia of the heart and large vessels is a transient disturbance in growth, more common in boys, and most frequent about the seventh and eleventh years. In regard to sports and exercise, anemic and chlorotic children, myocarditic heart muscles and the conditions due to transient defective development all require to be guarded from physical strain. Such children should not be allowed to share in the swimming, bicycling, tennis playing and gymnastics of the others. They do not need exercise, they need to be spared, and the physician in deciding when the child can join again in the sports of his mates should not allow himself to be influenced by the child's will and subjective feelings, nor by the opinion of the parents or the wishes of the other scholars. Every case of so-called school anemia requires careful examination, especially of the heart. The child's heart does not possess the tolerance generally ascribed to it; as a rule the heart is extremely sensitive during childhood. Fortunately it recuperates readily under the appropriate diagnosis and treatment, above all when it is spared unnecessary exercise and strain.

Münchener medizinische Wochenschrift.

68 (LIII, No. 36.) *Protection of Internal Organs in Roentgen Work.—Ueber Schädigungen innerer Organe durch Röntgen-Bestrahlung und Schutzmassnahmen dagegen. P. Krause.
69 Roentgen Technic.—Beitrag zur Blendentechnik. A. Machol.
70 Zur Diagnose der Aortenaneurysmen. J. Strasburger.
71 *Ueber den Zwerchfell-Reflex und die Zwerchfell-Innervation (of diaphragm). O. Hess.
72 Rektum-Amputation nach Witzel mit Erhaltung des Sphinkter externus. F. Wenzel.
73 Ein Beitrag zur Lehre von den Mesenterialzysten. W. Evelt.
74 *Hefetherapie der Gastroenteritis im Kindesalter (yeast for children). P. Sittler.
75 Eine neue Form hysterischer Zustände bei Schulkindern (epidemic tremor among school children). P. Schutte.
76 *Eine Ringprobe auf Azeton (ring test). F. Lange.
77 Der extravesikale Urin-Separator nach Heusner. F. Tromp.
78 Beitrag zum Instrumentarium für die Pubiotomie. O. Geissler.
79 *Fälle operativ behandelter Hyperplastisch-stenosierender Ileokökatuberkulose. H. Baum.

68. **Protection Against Roentgen Ray Injury.**—Krause reviews the literature on the subject of the effect of the Roentgen rays on the internal organs, and describes the protecting measures in use at von Strümpell's clinic at Breslau. The individual operating the Roentgen apparatus stands in a wooden cabinet, 186 cm. tall, 126 cm. long and 106 cm. wide, coated on the outside with thick sheets of lead covered with waxed cloth to prevent contact with the lead. The tubes are inspected through two small windows of lead glass, 6x8 cm. The cabinet has room for the interrupter and condenser, etc., and for a chair. The box with the diaphragm is lined with lead, and for nearly three years a very large one has been used, 52x54x95 cm., which holds the largest sized tubes. The diaphragm box can be easily raised or lowered, and an observation window of lead glass at the back has a shutter to cover it. The box not only protects against injury from the rays, but it insures complete darkness for the ray illumination. The examiner wears an ulster and mittens made of lead-impregnated rubber stuff, and goggles of lead glass, or the fluorescent screen is covered with a sheet of lead glass. Lead aprons to protect the genital organs are recommended, but are seldom used. The patient is protected with two sheets of lead foil sewed into waxed cloth or washable rubber cloth. Pigmentation of the exposed skin has been prevented in his experience by interposition of a shirt, or a piece of thin parchment or silk paper. In order to prevent lead intoxication he is very careful to see that everything containing lead is scrupulously covered with impermeable material, waxed cloth or the like. The German law holds the chief responsible for injury sustained by his assistant or subordinates in Roentgen work as well as by the patient.

71. **Innervation of the Diaphragm.**—Hess has been studying the diaphragm reflex and calls attention to the way in which the anterior and the posterior parts of the diaphragm behave differently in action. He thinks this can be explained only by assuming a dual system of innervation, which assumption is sustained further by the fact that the embryonal development of these parts of the diaphragm proceeds separately. The anterior part of the diaphragm is innervated by the intercostal nerves, while the posterior part is innervated by the phrenic nerves. When he presented this communication at a meeting of the local (Marburg) medical society he exhibited a patient with congenital impotency of both phrenic nerves. During respiration the anterior part of the diaphragm behaves normally, owing to the normal intercostal innervation of this part, but the posterior part remains passive.

74. **Yeast in Gastroenteritis in Children.**—Sittler states that yeast has been found a very satisfactory remedy in various cases of gastrointestinal affections in children at the Strassburg polyclinic for internal and children's diseases. The benefit was particularly striking in enteritis accompanied by much putrefaction in the intestines. The yeast preparations alone triumphed in several very severe cases that had not responded favorably to calomel, bismuth, or lavage of the intestines. In other cases the ordinary measures seemed to do no good until reinforced by the yeast.

76. **Ring Test for Acetone.**—Lange has modified the Legal test and rendered it simpler and more reliable by substituting ammonia for the sodium hydrate. This avoids the disturbing creatin reaction. The urine to be tested is treated with glacial acetic acid and then with a few drops of a freshly prepared solution of sodium nitro-prussid; a few cubic centimeters of ammonia are then cautiously poured on top of the mixture. In case of the presence of acetone, a bright violet ring appears at the point of contact. The violet ring grows brighter and brighter without spreading wider, irrespective of

the quantities used in the test-tube or conical glass. The reaction was most distinct in his tests when 15 c.c. of urine and from 0.5 to 1 c.c. of acetic acid were used. Acetone, 0.025 per cent., is readily detected by this test. Alcohol and aldehyd do not give the reaction.

79. **Tuberculous Ileocecal Processes.**—Baum has operated in 7 cases of tuberculous processes in the ileocecum causing hyperplastic stenosis. The results have confirmed his assumption that the tuberculous ileocecal tumor is a comparatively harmless, purely hyperplastic form of primary intestinal tuberculosis. Ordinary appendicitis may have something to do with its origin. The microscopic findings are similar to those in the hypertrophic form of lupus. The stenosis is the cause of the symptoms observed, and is best treated by resection of the ileocecum at a single operation. Exclusion of the part affected is a palliative operation to be reserved for debilitated patients. In conclusion he warns that simple laparotomy should be the limit of intervention in all cases of extensive tuberculous peritonitis.

Virchow's Archiv, Berlin.

Last indexed, XLVI, page 1656.

80 (184, No. 2.) Ueber Plasma-Zellen in dem entzündlichen Infiltrate eines Krebstumors des Magens (in gastric cancer). B. P. Sormani.
81 Multiple Primär-Tumoren. P. Frangenheim.
82 Zur Myelom-Frage. O. Lubarsch.
83 Zur Histologie der sogenannten akuten Leukämie. D. Veszprêmi.
84 Einige Bemerkungen ueber das meningeale Cholesteatoma im Anschluss an einen Fall von Cholesteatoma des 3. Ventrikels. F. Scholz.
85 Ueber die sogen Klappenhämatome am Herzen der Neugeborenen (valvular hematoma in the newly-born). Fahr.
86 Ueber bakteriologische Blutuntersuchungen an der Leiche (blood in the cadaver). M. Otten.
87 Alkoholismus und Leber-Cirrhose. F. Klopstock.
88 (No. 3.) Ueber Ferment-Immunität. H. Hildebrandt.
89 *Zur Pathologie der toxischen Graviditäts-Myelitis. F. Rosenberger and A. Schmincke.
90 Zum Experimental-Studium von Nebennieren-Glykosurie (suprarenal glycosuria). A. Velich (Prague).
91 *Ueber "peptische" Magen-Geschwüre, postmortale und pseudovitale Autodigestion. E. Neumann.
92 Das Traktions-Divertikel des Esophagus. H. Ribbert.
93 Vorkommen von Fett in Geschwülsten (fat in tumors). M. Dunin-Karwicka.
94 Origin of amyloid Bodies.—Entstehung der Amyloidkörperchen im Centralnerven-System. G. Catola and N. Achucarro.
95 Hansemann's Malakoplakia vesicæ urinariæ und ihre Beziehungen zur plaque förmigen Tuberkulose der Harnblase (of bladder). R. Kimla (Prague).
96 Zur pathologischen Anatomie der Aktinomykose beim Menschen. Schlagenhaufer.

89. **Myelitis of Pregnancy.**—Rosenberger and Schmincke describe a case of fatal ascending myelitis in a hitherto healthy primipara during pregnancy. Her husband was also healthy. The ascending character of the affection led to disturbances in speech with a bulbar syndrome. The symptoms were of the most varied character from paralysis, decubitus, etc., and signs of general intoxication (heart murmurs, parenchymatous nephritis), to psychic disturbances (stupor, motiveless hilarity). Delivery was artificially induced at the fifth month, and was followed by marked improvement, but the symptoms returned and death followed about seven months later. The fetus did not seem to be affected by the disease and lived for several hours. The affection was probably of toxic origin, the toxins acting principally on the heart and kidneys. Myelitic foci were found in the spinal cord but no bacteria. The outcome is either complete restitution in case of brief local action, or sclerosis of the parts involved in the severer cases. The affection seems to be independent of syphilis and of the condition of the fetus. The pregnancy is the cause, as artificial delivery cures or materially improves the patients. The myelitis has been known to recur at a successive pregnancy and to subside again after abortion. The tendency to recurrence is marked; possibly the presence of a myoma or absorption of septic poison from a decubitus, as in the case reported, may enhance the disposition to recurrence.

91. **Peptic Ulcer.**—Neumann thinks that the influence of mycotic invasion has not been considered enough in the study of the etiology of peptic ulcers. He refers to Pick's case, in which the diaphragm was perforated and two of the costal cartilages destroyed by a round gastric ulcer. The question as to the participation of infectious processes deserves further study, he adds. The gastric juice is bactericidal as a rule, but it does not afford an unconditional protection. Bacteria which flourish only on alkaline or neutral media can be excluded. He regards autodigestion as extremely improbable.

Zeitschrift f. Geb. u. Gynäkologie, Stuttgart.

Last indexed, page 1336.

97 (LVIII, No. 2.) *Ueber das Vorkommen von Kohlehydraten im Fruchtwasser bei Diabetes der Mutter (carbohydrates in amniotic fluid). Offergeld.
98 *Vaginale Total-Exstirpation bei totalem Vorfall des Uterus (total prolapse). P. Kirchgessner.
99 Zur Kenntnis der sekretorischen Tätigkeit des Amnion-Epithels. L. Mandl.
100 *Ueber intrauterine Erysipel-Infektion des Neugeborenen. A. Scheib.
101 Zur pathogenität peptonisierender Streptokokken. Id.
102 *Ueber Scopolamin-Morphium-Analgesie in der Geburtshilfe (in obstetrics). O. Lehmann.
103 Ueber das Oberflächen-Papillom des Eierstocks und seine Beziehung zum Cystadenoma serosum papillare (of ovary). S. Gottschalk.
104 Possibility of Embedding of Ovum Above Internal Os.—Möglichkeit der Einnistung des Eies über dem inneren Muttermund. M. Hofmeier.
105 Das untere Uterin-Segment. L. Aschoff.

97. **Carbohydrates in Amniotic Fluid in Diabetes.**—Offergeld concludes from the personal experience and research reported and from study of 55 articles bearing on the subject, that diabetes is an extremely dangerous and unfortunate complication of pregnancy. A pregnancy in a diabetic woman generally has a grave prognosis both for mother and child; the outcome is never certain. Even after sacrificing the life of the child, it is always doubtful whether the mother can recuperate. Whether or not to deliver the woman at once must be decided for each individual case, but if the decision is in favor of it, there must be no further delay. General anesthesia should be avoided in such cases, but possibly spinal or scopolamin-morphin anesthesia might take its place. Salus has recently published reports of 3 cases of pregnancy in diabetics. In two of the women it had preceded the pregnancy, and in the other, dextrose and acetone were eliminated periodically during the pregnancy for the first time. The women were delivered spontaneously at term of viable children, and in the first 2 cases the glycosuria subsided after delivery. In Offergeld's personal case, a diabetic woman in the seventh month of pregnancy, with considerable hydramnion, suddenly was seized with diabetic coma. The fetus was evidently killed by the same agent as caused the exacerbation in the mother. The glycemia in the mother was intense, and dextrose was discovered in the amniotic fluid and in the milk. The mother had lost the power of assimilation for dextrose alone, but in the fetal organism the carbohydrate metabolism was modified much more severely, as the other carbohydrates were elaborated in very abnormal fashion. By immediate delivery it proved possible to save the mother. It acted by improving the circulation as the hydramnion was evacuated, and by modifying the metabolic processes in the mother by removal of the fetus.

98. **Vaginal Total Extirpation in Case of Total Prolapse of the Uterus.**—Kirchgessner states that the after-results in 40 cases of total prolapse of the uterus treated by total removal of the organ were much better than in women treated by more conservative measures. In the latter a tendency to recurrence required correcting operations later. The finest results were observed when the bladder was carefully drawn out of the way and its wall sutured to that of the rectum, with fixation of the stumps of the adnexa and a plastic operation on the perineum to conclude the vaginal operation.

100. **Intrauterine Erysipelas.**—Scheib reports a case in which the conditions suggested that the mother must have become infected with streptococci during the course of labor. During some obstetric maneuver a small erosion was made on the child's palate. It became infected from the mother's streptococci and the child was born with erysipelas of face and scalp, and pleurisy. The mother developed a serious septic endometritis with streptococci in the blood, of the same strain as those found in the child.

102. **Scopolamin-Morphin Anesthesia in Obstetrics.**—Lehmann paid particular attention to the heart, kidneys and general condition in 70 lying-in cases in which scopolamin and morphin were injected for what he calls "Subkutanallgemeinanalgesie"—"subcutaneous general analgesia." He regards the

method as a valuable addition to our means of alleviating or abolishing the pains of childbirth, but remarks that the increased proportion of asphyxia among the children warns that its use must be restricted for the present to well-equipped maternities. He found that amounts as small as 0.008 gm. morphin and 0.0003 gm. scopolamin were ample in some cases.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed, page 1518.

106 (LIX. Nos. 5-6.) Subjektive Geschmacksempfindungen. Glycogeusia subjectiva, Kakogeusia subjektiva. (Taste sensations). W. Sternberg.
107 Das Verhalten des Harneisens bei Hyperglobulie (behavior of iron in urine). R. A. Abeles.
108 Ueber die präzipitinogene Eigenschaft trypsinverdauten Rinderserums (precipitating properties of beef serum after trypsin digestion). P. Fleischmann.
109 *Beitrag zur Klinik der Zwerchfellähmungen (paralyses of diaphragm). I. Ohm.
110 *Ueber Dikrotie bei Aorten-Insuffizienz. Goldscheider.
111 *Ueber Miliaria epidemica. W. Scholz.
112 (LX, Nos. 1-2.) *Ueber neurotische Knochen-Atrophie und die Frage der trophischen Funktionen des Nerven-Systems. Goldscheider.
113 *Die Röntgen-Therapie bei Leukämie und Pseudoleukämie. G. Joachim.
114 *To Test Force of Heart.—Ueber Kraftmessung des Herzens. F. Levy.
115 *Das Krankheitsbild der Lichtheimschen motorischen Aphasie (transkortikale motorische Aphasie). M. Rothmann.
116 *Ueber Myasis intestinalis. Wirsing.
117 *Heart Affections Among Working Classes.—Ueber Herzerkrankungen in der Berliner Arbeiterbevölkerung. Lubenau.
118 Ueber experimentelle Rückenmarksveränderungen nach Blutinjektion (changes in spinal cord after injection of blood). J. Kentzler.
119 "Diagnose und Pathogenese der im Kindesalter häufigsten Form der Concretio pericardii cum corde." O. Hess. Reply to Flesch.

109. **Paralysis of the Diaphragm.**—Ohm has had occasion to study a case in which the diaphragm was paralyzed. The patient was a waiter, 16 years old, who presented acute and extreme paresis of the diaphragm in consequence of rheumatic neuritis of both phrenic nerves in acute articular rheumatism. Clonic contractions of the phrenic nerves were noticed at first, assumed to be the motor response of the nerves to the irritation. The Roentgen rays showed that the diaphragm was in the expiration position, not varying during quiet breathing, but with deep breathing it rose and fell a trifle. During the deep breathing also the costal arches and epigastrium receded. Both sides of the chest behaved alike. The scalenus and intercostal muscles could be seen in vigorous vicarious action, and a spasmodic singultus movement could be noted in the chest and epigastrium, recurring three or four times a minute, without an audible hiccough in the throat. In 3 other cases he observed a paralytic condition of the diaphragm due to extension to the muscular part of the diaphragm of an inflammatory process in the costal pleura. The patients were under treatment for pleuritis or pneumonia. One was a man of 49 with mild fibrinous pleuritis, who suddenly exhibited extreme dyspnea, with very rapid pulse and respiration and intense pain in the left chest. The left side of the chest was seen to remain immovable during respiration. The percussion and auscultation findings, the tympanitic area of resonance, suggested a possible encapsulated or subphrenic pneumothorax, acute dilatation of the stomach, hernia of the diaphragm or elevation of the diaphragm from acute paralysis. Radioscopy confirmed the latter assumption. The severe symptoms continued for four days with remittent fever (the temperature previously had been normal or subfebrile). The fifth day considerable improvement was manifest, and by the end of a week the findings in the chest were alike on both sides. In the third case the pneumonia had developed in a probably tuberculous lung. In all 3 cases the symptom-complex localized in the lower half of the left chest was the same in each. In each a fibrinous pleuritis was known to exist. The inflammatory process had evidently spread to the diaphragmatic pleura, and had entailed acute paresis either by neuritis of the motor terminals of the phrenic nerve or by myositis of the diaphragm, which in turn had produced acute eventration of the diaphragm.

110. **Dicrotic Pulse with Aortic Insufficiency.**—Goldscheider states that he has recently had under observation 3 patients with aortic insufficiency and an unmistakable dicrotic pulse. The dicrotic characteristics varied at different times and even on the two sides at the same time, in some instances. He regards this as evidence that vasomotor conditions have much to do with the development of the dicrotic pulse. His experience has convinced him that the appearance of a pronounced dicrotic pulse in case of aortic insufficiency testifies that the mitral valve is also beginning to show evidence of insufficiency.

111. **Epidemic Miliary Fever.**—Scholz of Graz reports the details of an epidemic of 126 cases of an acute inflammatory disorder of the sweat glands characterized by the appearance of small vesicles with much burning, itching, pains, fever and chills, and extraordinarily profuse sweats, affecting adults exclusively, usually between the ages of 20 and 40. The mortality amounted to 16.7 per cent., and about 2,5 per cent. of the population were affected. The disease appeared sporadically in 38 different villages, but was finally stamped out by strict isolation of the patients. In some the disease recurred several times. No treatment seemed to be effectual. The patients preferred to wrap themselves in blankets and shrank from the slighest current of air. The German name for the disease is *Schweissfriesseln*, which might be translated as sweat-shivers.

112. **Neurotic Atrophy of the Bones.**—Goldscheider gives an illustrated description of a case of neurotic atrophy of the bones of the hand following a fall in which the upper left arm was injured on an iron picket fence. The bone was not directly injured at the time, but the soft parts were extensively wounded and the arm was kept in a sling for three months. After the wound healed the movements of the forearm and hand were somewhat restricted. The patient was 16 at the time, and in the course of years the fingers became contracted like claws, and the terminal phalanges gradually shortened. The skin of the hand was always cool and rather livid. The nails disappeared, and radioscopy showed merely rudiments of the terminal phalanges of the fingers. The literature on the subject is reviewed, the general conclusion being that peripheral neurotic atrophy of the bones is probably due to a morbidly enhanced nervous condition of excitability of the nerves—in which the vessels also participate—combined with a disturbance in the centripetal conductibility.

113. **Roentgen Treatment of Leukemia and Pseudoleukemia.**—Joachim relates the details of 28 cases and discusses the various aspects of Roentgen treatment and the results to be anticipated. He thinks that a cure is out of the question, but that in many cases the improvement is such as to restore the feeling of health for years. The fact that Roentgen treatment does not help in all cases, and may do harm in some, is a feature common to many other therapeutic measures. The prognosis depends essentially on the more or less pronounced anemia, and the way in which the anemia is influenced by treatment. In case of myelemia, the prognosis depends chiefly on the resistance of the myelocytes. In any event, the cases of myelemia in which the number of leucocytes does not correspond to the size of the spleen should be regarded as the least favorable. He advocates a trial of Roentgen treatment in every case without fail. It should be suspended or restricted in case the anemia increases or the general health shows serious changes. It may be possible, he adds, that cases in which Roentgen treatment does not seem to help, may be modified by other measures, such as a course of arsenic, so that after a time the Roentgen treatment may be resumed with good results. In one case of myelemia the patient was so much improved that she passed through a subsequent pregnancy without exacerbation of her condition, and is still, two years later, free from noticeable disturbances. The results were better when the spleen and lymph glands were exposed rather than the bones.

114. **Measurement of the Energy of the Heart.**—Levy has been testing Katzenstein's method of determining the force of the heart. It was described in these columns on page 159, of volume xliii, 1904. After determining the blood pressure and the pulse on the reclining patient, both of the femoral arteries are compressed with the middle finger of each hand at Poupart's ligament, the other fingers testing whether the compression is absolute. With normal heart energy, the blood pressure then rises by from 5 to 15 mm. mercury while the pulse remains unaffected or drops. On relinquishing the compression

the blood pressure gradually returns to normal. In case of hypertrophy of the heart, aortic insufficiency, aortic sclerosis or nephritis, the blood pressure rises much higher during the compression. A slightly enfeebled heart is not able to raise the blood pressure when the obstruction to the circulation is interposed, and with a much enfeebled heart the blood pressure actually sinks under the compression, while in both events the pulse becomes more or less accelerated. The respiration is kept superficial during the compression. The results of Levy's research have confirmed the great value of this means of determining the power of the heart. It is especially instructive in examining the heart after acute infectious diseases and in heart affections of all kinds, and it will be found a valuable aid in examining in case of accidents and for life or accident insurance. It must not be forgotten, however, that in very excitable, nervous and emotional patients the findings can not be accepted as always reliable.

115. **Transcortical Motor Aphasia.**—Rothmann summarizes what has been written on the subject of transcortical motor aphasia, and describes a pure case observed in a man of 82, with illustrations of the autopsy findings. They confirm Lichtheim's views in every respect and also Gall and Broca's localization of the cerebral functions. The features of the case speak against Marie's recently announced views.

116. **Intestinal Myasis.**—Wirsing reports 3 cases in which maggots were evacuated from the human intestine. The patients were children under 5, one a breast nursling. There were no disturbances from the presence of the maggots in the infant; the flies had probably deposited their eggs in the anus as the child was taking an air bath at an open window. The older child had long suffered from gastrointestinal disturbances, and an exacerbation was treated with calomel, after which about 50 maggots were voided. Differentiation is difficult, as the symptoms are not characteristic. Prophylaxis is the main point, avoiding ingestion of meat and cheese on which flies are liable to have deposited eggs.

117. **Heart Affections Among Wage-Earners.**—Lubenau's patients were men performing manual labor, who suddenly developed symptoms of weakness of the heart, dyspnea, vertigo and pain in the heart. Prompt and appropriate treatment in the Beelitz sanatorium soon restored complete earning capacity, with apparently no tendency later to weakness of the heart when abuse of alcohol or tobacco is avoided. In 2 cases of neurosis of the heart, prompt treatment improved, but a tendency to recurrence persisted, and after two courses of treatment the patients were advised to seek some other less laborious work. His experience has been that not only excessive physical, but also excessive mental work, is liable to bring on a neurosis of the heart. This class is recruited from cashiers, typesetters, telephone operators, bookkeepers and others whose work requires great concentration of attention. In 2 cases the neurosis developed following influenza, and in others after scarlet fever or other infectious disease. He has also had some experience with neuroses of the heart developing in the course of gastrointestinal disturbances and subsiding as these were controlled. In one case attacks of syncope from childhood were substituted later by attacks of palpitations and headache, assumed to be of an epileptiform nature, although no other sign of epilepsy could be detected. In case of hypertrophy and dilatation of the heart, prompt, appropriate treatment and change to a less strenuous work restore complete earning capacity. In a number of instances he observed heart disturbances in persons of rather undeveloped physique. Their work had not been very laborious, but yet it was beyond their physical capacity owing to their slightly defective development. The results of treatment were less favorable in these cases than in those of true neurosis. Hydriatic procedures are freely used at the sanatorium. When general neurasthenic symptoms are prominent, the galvanic or faradic two-cell electric bath has been found very useful. In case of violent and recurring tachycardia, the patient reclines for several hours a day with an ice-bag or coil over the heart. Toward the end of treatment systematic exercises are given to accustom the heart to resumption of its ordinary tasks.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A New and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the Kindred Branches, with their Pronunciation, Derivation, and Definition, including much collateral Information of an Encyclopedic Character. By W. A. N. Dorland, A.M., M.D. Fourth edition, revised and enlarged. Flexible Morocco. Pp. 836. Price, $4.50 net. Philadelphia: W. B. Saunders Company, 1906.

DIET IN HEALTH AND DISEASE. By J. Friedenwald, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and J. Ruhräh, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second edition, thoroughly revised and enlarged. Cloth. Pp. 728. Price, $4.00 net. Philadelphia: W. B. Saunders Company, 1906.

SAUNDERS' POCKET MEDICAL FORMULARY, With an Appendix, Containing Posological Table; Formulas and Doses for Hypodermic Medication; Poisons and their Antidotes; etc. By W. M. Powell, M.D. Eighth edition, thoroughly revised, enlarged and adapted to the eighth revision (1905) of the U. S. Pharmacopeia. Flexible Morocco. Pp. 299. Price, $1.75 net. Philadelphia: W. B. Saunders Company, 1906.

ATLAS AND TEXT-BOOK OF HUMAN ANATOMY. By J. Sobotta, Professor of Anatomy in the University of Würzburg. Edited with additions by J. P. McMurrich, A.M., Ph.D., Professor of Anatomy in the University of Michigan. Vol. I. Bones, Ligaments, Joints, and Muscles. With 320 Illustrations, mostly in colors. Cloth. Pp. 258. Price, $6.00 net. Philadelphia: W. B. Saunders Company, 1906.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY, for Practitioners and Students. By W. E. Ashton, M.D., LL.D., Fellow of the American Gynecological Society, etc., with Ten Hundred and Fifty-seven New Line Drawings Illustrating the Text by J. V. Alteneder. Third edition, revised and enlarged. Cloth. Pp. 1097. Price, $6.50 net. Philadelphia: W. B. Saunders Company, 1906.

A SYLLABUS OF MATERIA MEDICA. Copiled by W. Coleman, M.D., Professor of Clinical Medicine and Instructor in Materia Medica and Therapeutics in Cornell University Medical College, etc. Third edition, revised to conform to the Eighth Decennial Revision of the U. S. Pharmacopeia. Cloth. Pp. 186. Price, $1.00. New York: William Wood & Company.

PREVALENT DISEASES OF THE EYE, A Reference Handbook, especially Adapted to the Needs of the General Practitioner and the Medical Student. By S. Theobald, M.D., Clinical Professor of Ophthalmology and Otology in the Johns Hopkins University, etc. Cloth. Pp. 551. Price, $4.50 net. Philadelphia: W. B. Saunders Company, 1906.

A TREATISE ON SURGERY. By G. R. Fowler, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York, etc. Containing 888 Text-Illustrations and four Colored Plates, all Original. Vol. II. Cloth. Pp. 714. Price, $15.00 net. Philadelphia: W. B. Saunders Company, 1906.

DISEASES OF THE STOMACH, A Text-Book for Practitioners and Students. By M. Einhorn, M. D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital, etc. Fourth edition, revised. Cloth. Pp. 559. Price, $3.50 net. New York: William Wood & Company.

OBSTETRICS FOR NURSES. By J. B. De Lee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, etc. Second edition, thoroughly revised and enlarged. Cloth. Pp. 510. Price, $2.50 net. Philadelphia: W. B. Saunders Company, 1906.

TECHNIC OF OPERATIONS ON THE INTESTINES AND STOMACH. By A. H. Gould, M.D., of Boston. With 190 Illustrations, Mostly Original. Several of them in Colors. Cloth. Pp. 302. Price $5.00. Philadelphia: W. B. Saunders Company, 1906.

A TEXT-BOOK OF OBSTETRICS. By B. C. Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania, etc. Fifth edition, revised and enlarged. Cloth. Pp. 915. Price, $5.00 net. Philadelphia: W. B. Saunders Company, 1906.

PHOTOSCOPY (Skiascopy or Retinoscopy). By M. D. Stevenson, M.D., Ophthalmic Surgeon to the Akron City Hospital, etc. Illustrated. Cloth. Pp. 126. Price, $1.25 net. Philadelphia: W. B. Saunders Company, 1906.

TABES DORSALIS, The Lumleian Lectures, Delivered before the Royal College of Physicians, London, March, 1906. By D. Ferrier, M. D., LL.D., F.R.S. Cloth, Pp. 122. Price, $1.50 net. New York: William Wood & Company.

A BOOK ABOUT DOCTORS. By J. C. Jeaffreson. The Doctor's Recreation Series, Charles Wells Moulton, General Editor. Vol. IV. Cloth. Pp. 516. Price, $2.50. Akron, Ohio: The Saalfield Publishing Company.

THE AMERICAN NATIONAL RED CROSS, Chartered by Congress, Jan. 5, 1905. Bulletin No. 4. Issued by the Central Committee, October, 1906. National Headquarters, Washington, D. C. Paper. Pp. 100.

OUTLINES OF HUMAN EMBRYOLOGY, A Medical Student's Handbook of Embryology. By G. R. Satterlee, M.A., M.D. First edition. Cloth. Pp. 173. Price, $1.25 net. New York: John Wiley & Sons, 1906.

ABDOMINAL OPERATIONS. By B. G. A. Moynihan, M.S., F.R.C.S. Second edition, thoroughly revised. Cloth. Pp. 815. Price, $7.00 net. Philadelphia: W. B. Saunders Company, 1906.